SERVIS KVM
USB Emulation

User's Manual

4 Port KVM Switch (FS-1104AU/FS-1104MU)
8 Port KVM Switch (FS-1108AU/FS-1108MU)
16 Port KVM Switch (FS-1116AU/FS-1116MU)

Published by FUJITSU COMPONENT LIMITED

FUJITSU

この装置は、クラスA情報技術装置です。
この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。
この場合には使用者が適切な対策を講ずるよう要求されることがあります。
VCCI-A

High Safety Required Use

This Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter "High Safety Required Use"), including without limitation, reaction core control in nuclear power facilities, aircraft autopilot flight control, air traffic control, operation control in mass transport control systems, medical instruments for life support systems, missile launching control in weapon systems. You shall not use this Product without securing the sufficient safety required for the High Safety Required Use. If you wish to use this Product for High Safety Required Use, please consult with our sales person representatives in charge before such use.

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High Safety Required Use

1. Preface

FUJITSU COMPONENT would like to thank you for your purchase of a 4 Port KVM Switch, an 8 Port KVM Switch, or a 16 Port KVM Switch (hereinafter referred to as a "KVM Switch" or "this device"). Using this device enables multiple servers to be operated from a single monitor, keyboard, and mouse, greatly reducing your workspace area. In addition, if this device is used in a cascade connection, up to 256 servers can be operated by using 17 KVM Switches (16 port type).
This manual explains basic operation of KVM Switches. Before using this device, make sure to carefully read the contents of this manual to ensure that this device is used correctly.
After reading, store this manual in a safe place for easy reference when using this device.

2. Conventions

The symbols and terminology that are used in this manual are described below.

Caution Ignoring this symbol and handling the device incorrectly may result in physical damage (to this device, the server, etc.) or physical injury.

Point This symbol indicates supplemental information, comments or hints.

Brackets [ ]	References important chapter titles and terminology
KVM Switch or this device	Used as a common term for 4 port, 8 port, and 16 port switches in explanations
<>	Indicates keys on the keyboard Example: <ESC> indicates the ESC key and <ENTER> indicates the ENTER key
Numbers enclosed by brackets	Indicates the required order of operations.

3. Confirming Package Contents

Check whether the following items were included in the shipping package by using check marks (✓) in the checkboxes below.

4 Port (FS-1104AU / FS-1104MU)

□ 4 Port KVM Switch	×1
□ User's Manual (this manual)	×1
□ AC Adapter	×1
□ AC Cable [1m]	×1
□ Power Cord Clamp	×1

8 Port (FS-1108AU / FS-1108MU)

□ 8 Port KVM Switch	×1
□ User's Manual (this manual)	×1
□ AC Cable [2m]	×1
□ Power Cord Clamp	×1
□ Wire Fixer	×1
□ Rack Fixing Bracket (Large)	×2
□ Rack Fixing Bracket (Small)	×2
□ Rack Fixing Bracket Screw	×10

16 Port (FS-1116AU / FS-1116MU)

□ 16 Port KVM Switch	×1
□ User's Manual (this manual)	×1
□ AC Cable [2m]	×1
□ Power Cord Clamp	×1
□ Wire Fixer	×1
□ Rack Fixing Bracket (Large)	×2
□ Rack Fixing Bracket (Small)	×2
□ Rack Fixing Bracket Screw	×10

If something is missing from the package, contact your FUJITSU COMPONENT sales representative.

4. Important Notices

Chapters 5 and 6 contain cautions that must be taken when operating a KVM Switch and information related to safety. Carefully read these chapters to use a KVM Switch correctly.

5. Safety

Caution

Safety Precautions

This device adheres to the safety regulations related to information processing equipment such as electronic office machines that are used in an office environment. If you have any questions please contact your FUJITSU COMPONENT sales representative.

- To prevent extreme bumping or shaking when moving a KVM Switch, use the original shipping container or a box similar to it.
- During installation and before using a KVM Switch, carefully read [9. Installation] and the section about environmental conditions in [12.Specifications] to use the KVM Switch correctly.
- Take power from a power outlet that constantly provides power without being interrupted by switches.
- Moving a KVM Switch from a cold environment to the installation location may cause condensation to occur.
  Before using a KVM Switch, allow it to dry out completely and to reach the ambient temperature of the installation location.
- Lay cables in an area where they will not become damaged. Refer to the relevant sections in [10. Cable connection and removal] when plugging or unplugging the cables.
- Do not connect or remove cables during thunderstorms.
- Do not allow foreign substances (such as necklaces and clips) or liquids inside KVM Switches.
- In an emergency (device or parts failure: damage caused by liquid or foreign objects in the KVM Switch), remove all cables from the KVM Switch as soon as possible and contact your FUJITSU COMPONENT sales representative.
- Only licensed engineers can repair a KVM Switch. Any unlicensed user that opens a KVM Switch and makes incorrect repairs may cause electric shock or fire.
- Always hold the connector portion and do not jerk the cables when removing them.
- Avoid operating a KVM Switch or unplugging connectors with wet hands.
- Do not place any unnecessary items (such as a cup) on top of a KVM Switch.
- Only licensed personal can uncouple, remove, or replace parts (such as electro-magnetic wave devices) which bear a warning mark (such as a lightning bolt).
- To prevent interference, it is necessary to adequately isolate the data cables that are connected to peripheral equipment.
- Keep this manual with the KVM Switch. If you give the KVM Switch to a third party, also give them this manual.

6. Note When Using a Cascade Connection

- Using a cascade connection with previous KVM Switch models

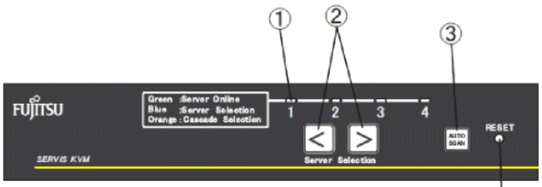
  For cascade connections with previous KVM Switch models, even though a cascade connection is possible by using the previous KVM Switch model as the master or slave side, restrictions may apply to functions with some models.

7. Features

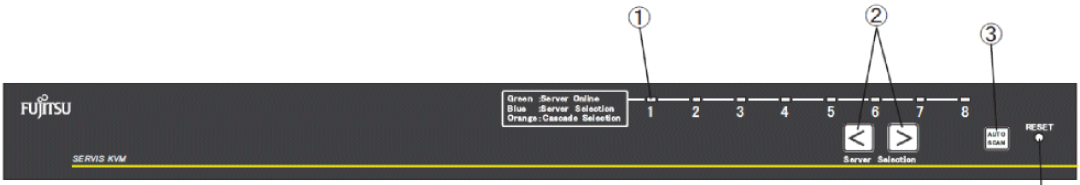
- Using a KVM Switch enables multiple PC servers to be operated by eliminating the need for multiple consoles (monitor, keyboard, and mouse) and making the use of multiple PC servers possible from a single console, greatly reducing the workspace area.
- The maximum number of servers that can be selected for KVM Switches is four for the 4 port type, eight for the 8 port type, and 16 for the 16 port type.
- The number of connectable servers can be increased by using a cascade connection.
  Example: 256 servers can be connected with 17 KVM Switches (16 port type).
- WUXGA (1920×1200) and a refresh rate of 60Hz is supported for the resolution of the monitor.
- Servers can be easily selected by using the keyboard and mouse (Hotkey mode).
- In the Hotkey mode, the server can be changed on the On Screen Display (hereinafter referred to as OSD) as the screen is being watched.
- For the OSD, hot keys can be input from the keyboard and mouse. Selection and settings can be performed by using three types of hot keys (<Ctrl> + <Alt> + <Shift>, <Ctrl> x2, <Scroll Lock> x2) or by clicking the central button of the mouse with a wheel button.
- AutoScan is performed by the front switch or by the keyboard.
- Because AutoScan automatically changes running servers, the status of each server can be monitored at a constant cycle. In addition, six levels can be set for the frequency of changing.
- A PC that has a USB port or a PS/2 port for keyboard and mouse interfaces can be connected to servers by using dedicated server/PC connection cables (refer to the items in the optional products section of [12.Specifications]).
- The FS-11XXMU supports ORACLE (SUN) servers.

8. Components

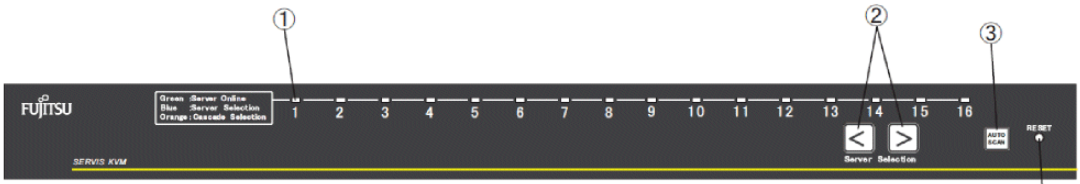
Front panel view



Front panel view of the 4 Port KVM Switch

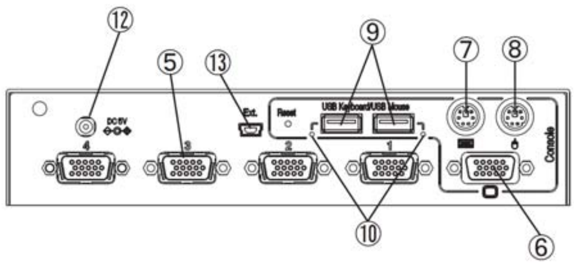


Front panel view of the 8 Port KVM Switch

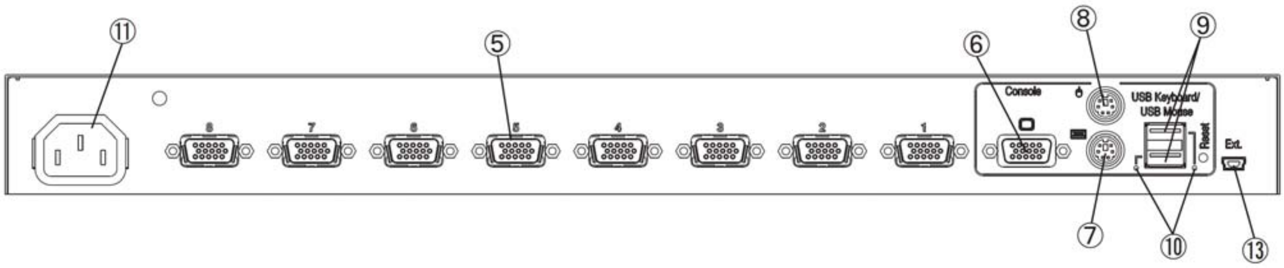


Front panel view of the 16 Port KVM Switch

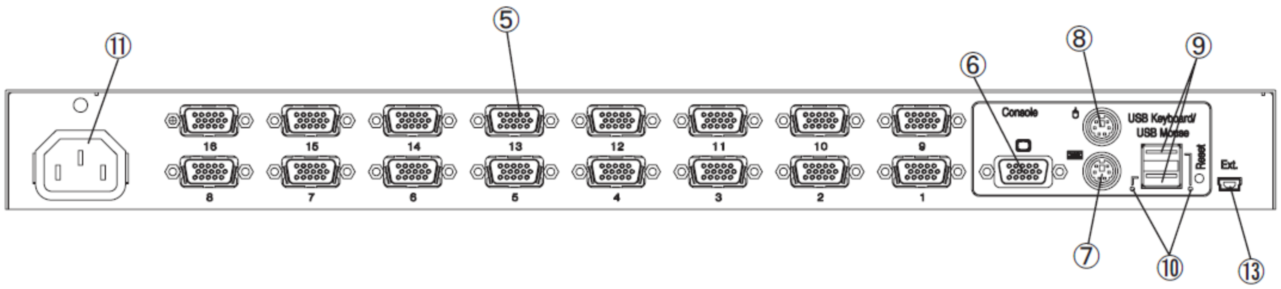
Rear view



Rear view of the 4 Port KVM Switch



Rear view of the 8 Port KVM Switch



Rear view of the 16 Port KVM Switch

(1) LED

LEDs indicate states such as the server power status and the selected status.

When a cascade connection is not used

Server power	Port selection status	LED display
ON	Selection is being performed	Blue light
ON	Not selected	Green light
OFF	Selection is being performed	Blue light
OFF	Not selected	Off

When a cascade connection is used

1: Master side

Slave KVM Switch connection	Master side Port selection status	LED display
Yes	Selection is being performed	Orange light
Yes	Not selected	Green light
No (server is also not connected)	Selection is being performed	Blue light
No (server is also not connected)	Not selected	Off

2: Slave side

<table>
<tr><th>Server power</th><th>Master side
Port selection status</th><th>Slave side
Port selection status</th><th>LED display</th></tr>
<tr><td>ON</td><td rowspan="4">Slave side selection is being performed</td><td>Selection is being performed</td><td>Blue light</td></tr>
<tr><td>ON</td><td>Not selected</td><td>Green light</td></tr>
<tr><td>OFF</td><td>Selection is being performed</td><td>Blue light</td></tr>
<tr><td>OFF</td><td>Not selected</td><td>Off</td></tr>
<tr><td>ON</td><td rowspan="2">The slave side is not selected, or another slave is being selected</td><td>-</td><td>Green light</td></tr>
<tr><td>OFF</td><td>-</td><td>Off</td></tr>
</table>

3: For other cases

Status		LED display
No AC power supply for the KVM Switch (unplugged from power outlet, etc)		Blinking green light for all ports (at intervals of 40ms)
When the HOTKEY mode is used	When ports that are not used for the cascade connection are being selected	Blinking blue light (at intervals of 400ms)
	When ports that are used for the cascade connection are being selected	Blinking orange light (at intervals of 400ms)
When the [RESET] switch is pressed	When ports that are not used for the cascade connection are being selected	Blinking blue light (approx. 1 time)
	When ports that are used for the cascade connection are being selected	Blinking orange light (approx. 1 time)
When the [RESET] switch is pressed for a long time (5 seconds or more)		AU: Fades-in/fades-out in green MU: Fades-in/fades-out in blue
When AutoScan is performed	When ports that are not used for the cascade connection are being selected	Blinking blue light (Timing 1)
	When ports that are used for the cascade connection are being selected	Blinking orange light (Timing 1)
Supported language when performing simple settings for the keyboard type (using one port from ports 1-4)		Blinking blue light (at intervals of 400ms)

(Timing 1)



(2) [ServerSelection] switch

Pushing the [ServerSelection] switch selects a server. Ports can also be selected when the power status of the server is OFF.

(3) [AutoScan] switch

Pressing the [AutoScan] switch starts the AutoScan mode. In the AutoScan mode, the screen of servers with ports for which the power is ON can be changed automatically in order.

Refer to "11-2-5. AutoScan Mode" for more details.

(4) [RESET] switch

This switch is not used for normal operations. Use the [RESET] switch when servers cannot be selected or input errors occur with the mouse and keyboard by pressing the [RESET] switch lightly with the tip of a pen or similar object.

Pressing the [RESET] switch resets the microcomputer in the KVM Switch.

After resetting, the restoration process does not affect server operation because the PS/2 keyboard and PS/2 mouse are restarted with their modes maintained.

The USB keyboard and the USB mouse are disconnected for a one second interval. This disconnection operation is used to restore USB operation.

	When the [RESET] switch is pressed for a short time (within 5 seconds)	When the [RESET] switch is pressed for a long time (5 seconds or more)
For level 1 connection	The USB disconnection process is performed for the selected ports and consoles.	The USB disconnection process is performed for all of the ports and consoles. The mode becomes the POWER SUPPLY: ALWAYS ON mode.
For cascade connection	The USB disconnection process is performed for the selected ports and consoles when the [RESET] switch on the master side is operated. In addition, the recognition process of the cascade connection is tried again. The USB disconnection process is performed for the selected ports on the slave side when the [RESET] switch on the slave side is operated.	The USB disconnection process is performed for all of the ports and consoles on the slave and master side when the [RESET] switch on the master side is operated. In addition, the mode becomes the POWER SUPPLY:ALWAYS ON mode after the recognition process of the cascade connection is tried again. The USB disconnection process is performed for all of the ports on the slave side when the [RESET] switch on the slave side is operated.

In addition, when the [ServerSelection] switch on the left side of the front panel, the [AutoScan] switch, and the [RESET] switch are pressed at the same time, various settings are initialized as shown by the following table.

Server name	Initialized
AutoScan frequency	Initialized
Normal display status	Initialized
Setting for whether to display when AutoScan is being performed	Initialized (display is enabled)
HOTKEY settings	Initialized
Country code setting	Settings retained
POWER SUPPLY:ALWAYS ON	Settings retained
EDID	Settings retained
SELECT-A/B	Settings retained

(5) Ports for server connection

The ports of a KVM Switch are connected to the keyboard/mouse/monitor connectors by using dedicated cables.

(6) Monitor connector

The monitor connector is used to connect the monitor to a KVM Switch.

(7) Keyboard connector

The keyboard connector is used to connect the PS/2 keyboard to a KVM Switch.

(8) Mouse connector

The mouse connector is used to connect the PS/2 mouse to a KVM Switch.

(9) USB keyboard/mouse connector

The USB keyboard/mouse connector is used to connect a USB keyboard, mouse, or hub to a KVM Switch.
It does not matter which of these is connected for operation.
Devices other than a USB keyboard, mouse, or hub cannot be connected.
The maximum number of devices that can be connected is as follows.

<table>
<tr><td>4 port type</td><td rowspan="2">Keyboards: 2
Mouse devices: 3
Hubs: 1</td></tr>
<tr><td>8 port type</td></tr>
<tr><td>16 port type</td><td>Maximum total number of keyboards and mouse devices: 4
Maximum number of hubs:1 level</td></tr>
</table>

Note that when wireless type devices are connected using a wireless receiver, a signal may be output that a mouse or keyboard is connected even though a keyboard or mouse is not actually connected.

In this case, devices that are not used are also counted in the number of devices that can be connected.

Point When keyboards or mouse devices are both connected to a PS/2 console and a USB console, the USB side is given priority and the PS/2 side does not operate.

ORACLE (SUN) server support

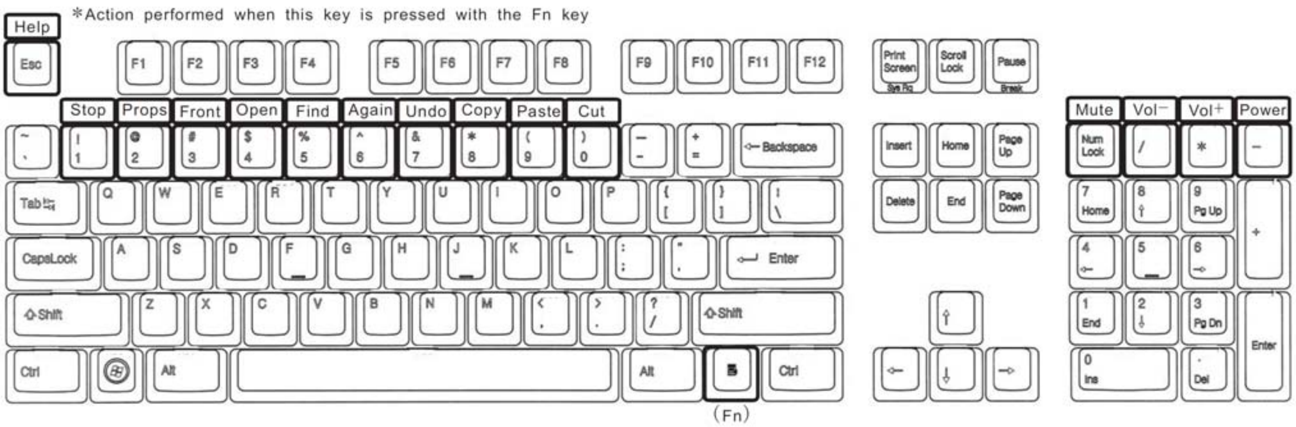
- For the FS-1104AU/FS-1108AU/FS-1116AU

	Windows server	ORACLE (SUN) server
Standard keyboard (USB)	Yes	-
Keyboard (USB) for ORACLE (SUN)	Yes	Yes

- For the FS-1104MU/FS-1108MU/FS-1116MU

	Windows server	ORACLE (SUN) server
Standard keyboard (USB)	Yes	Yes (Note)
Keyboard (USB) for ORACLE (SUN)	Yes	Yes

Note: Pressing the Application key with other keys outputs a dedicated SUN key code.



(10) USB port LED

This LED displays the status of the USB ports.

Status	LED display
The relevant USB port is available or is being used	Green light
An error occurs for the relevant USB device - excess current - unsupported USB device - the number of connectable USB devices is exceeded	Off
The relevant USB port is recognizing the USB device	Blinking green light

(11) Inlet (8 and 16 port type only)

The inlet is used to connect the AC100V power cable.

Do not use any cords except for dedicated power cords.

(12) Connector for the AC Adapter (4 port type only)

This connector is used to connect a dedicated AC adapter. Do not use any cords except dedicated AC adapters.

(13) Mini USB connector

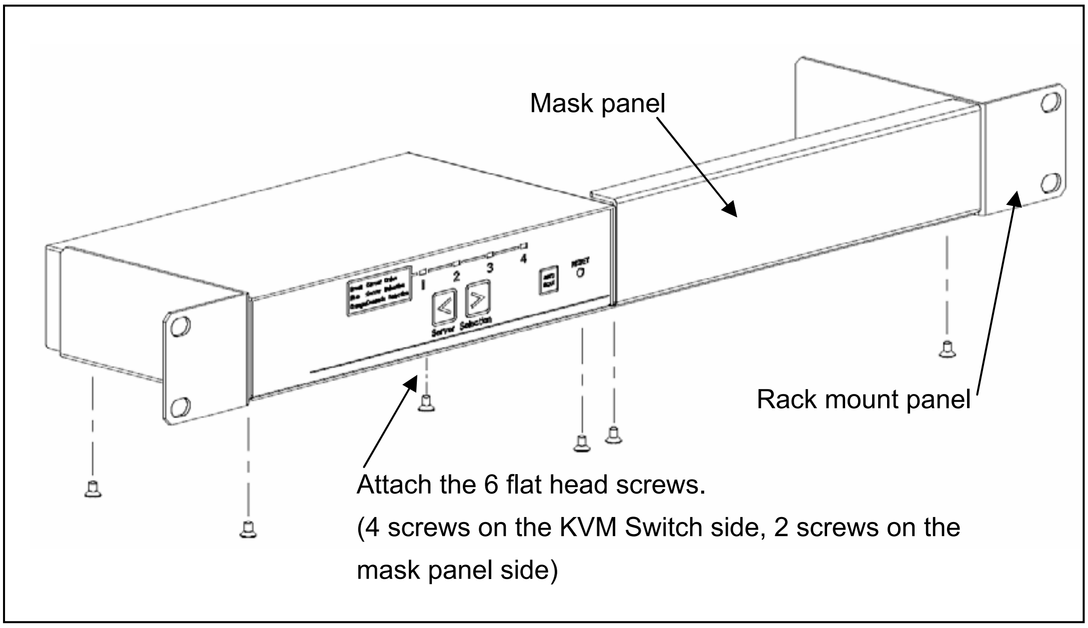
This connector is not used for normal operations. This connector connects to the server with a USB cable to use a dedicated application to update the firmware of a KVM Switch.

9. Installation

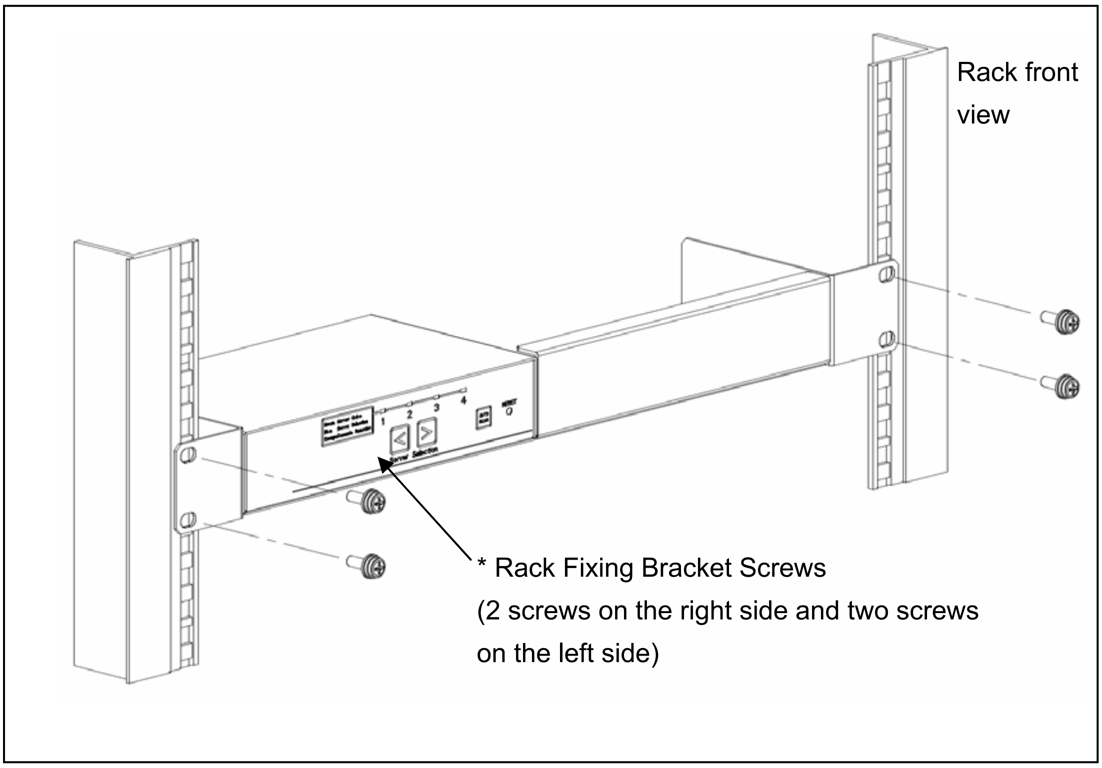
A KVM Switch can be installed as an external device. It can also be installed in a rack.
A 4 port KVM Switch can be installed in a rack by using a rack mount panel (FP-P005: sold separately).

Rack installation (4 port type)

(1) Fasten 6 flat head screws at the rear of the rack mount panel (4 screws on the KVM Switch side, 2 screws on the mask panel side) to attach the rack mount panel (FP-P005: sold separately) to the KVM Switch.



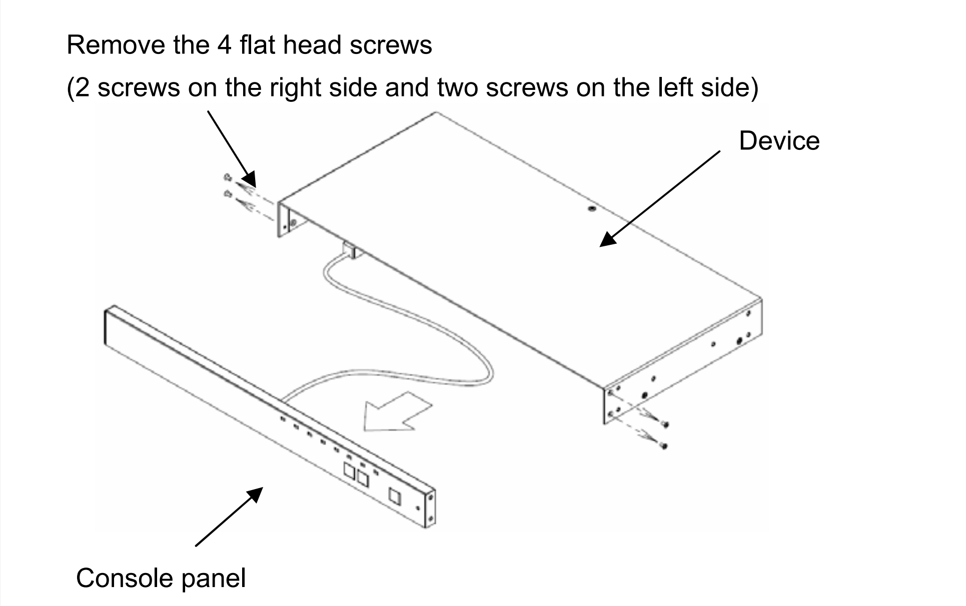
(2) Attach the rack mount panel to the rack.



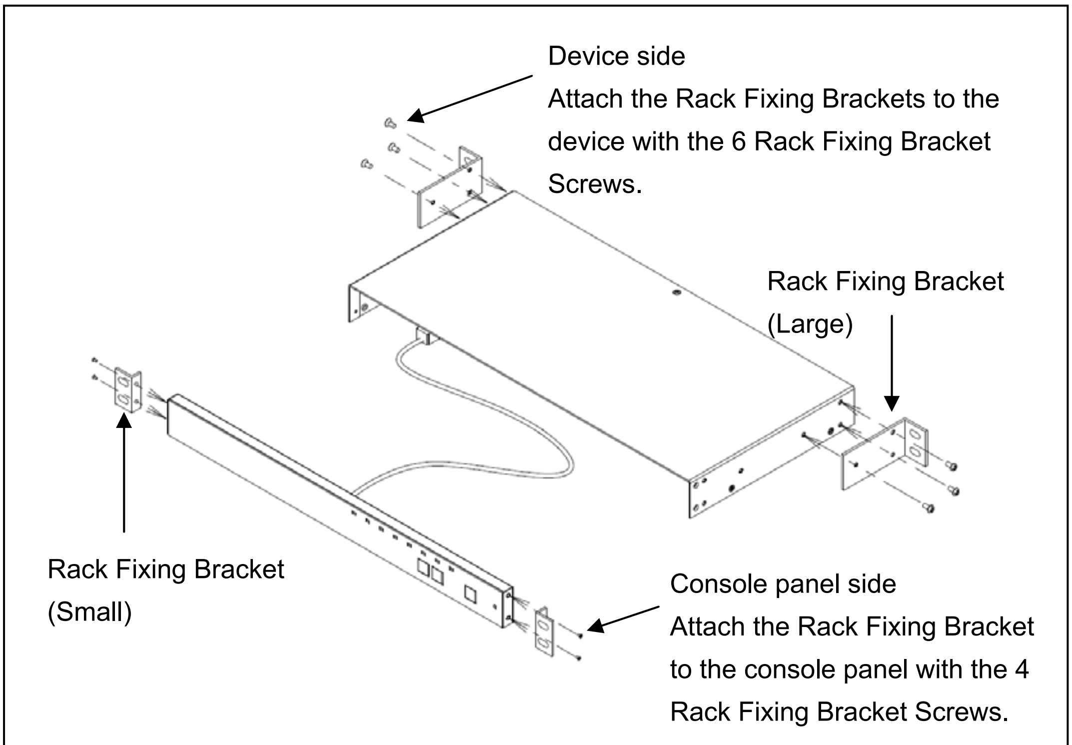
* Rack Fixing Bracket Screws are not provided.

Rack installation (8 port and 16 port types)

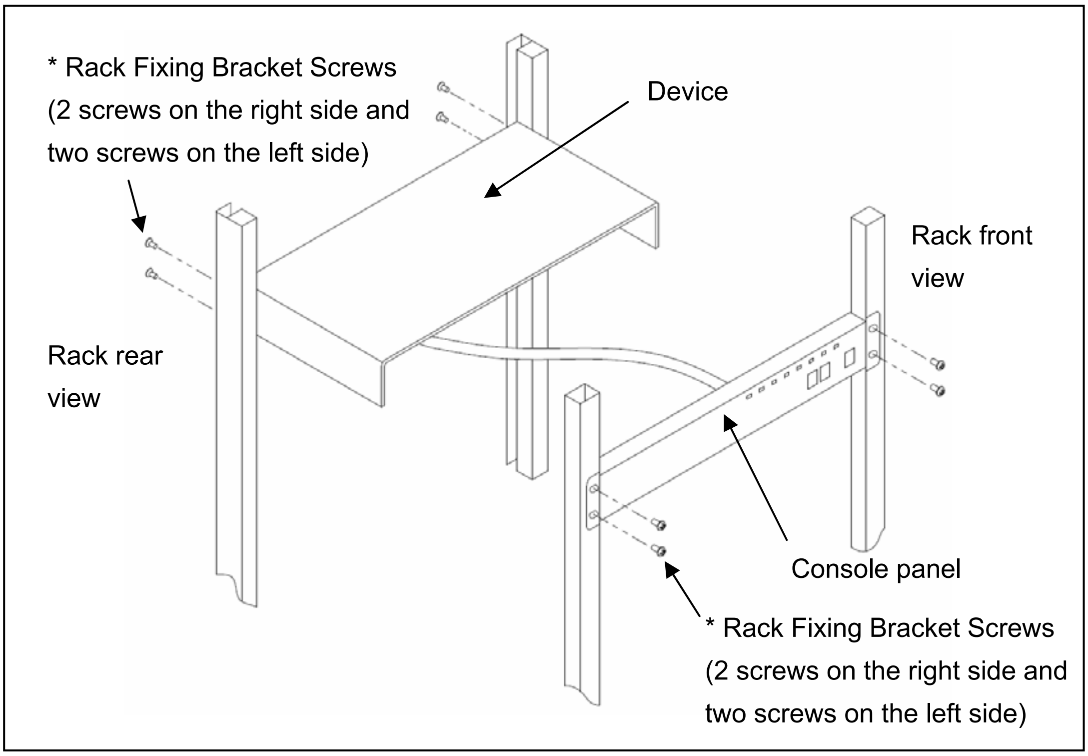
(1) Remove the console panel from the device.



(2) Attach the Rack Fixing Brackets to the device and the console panel.

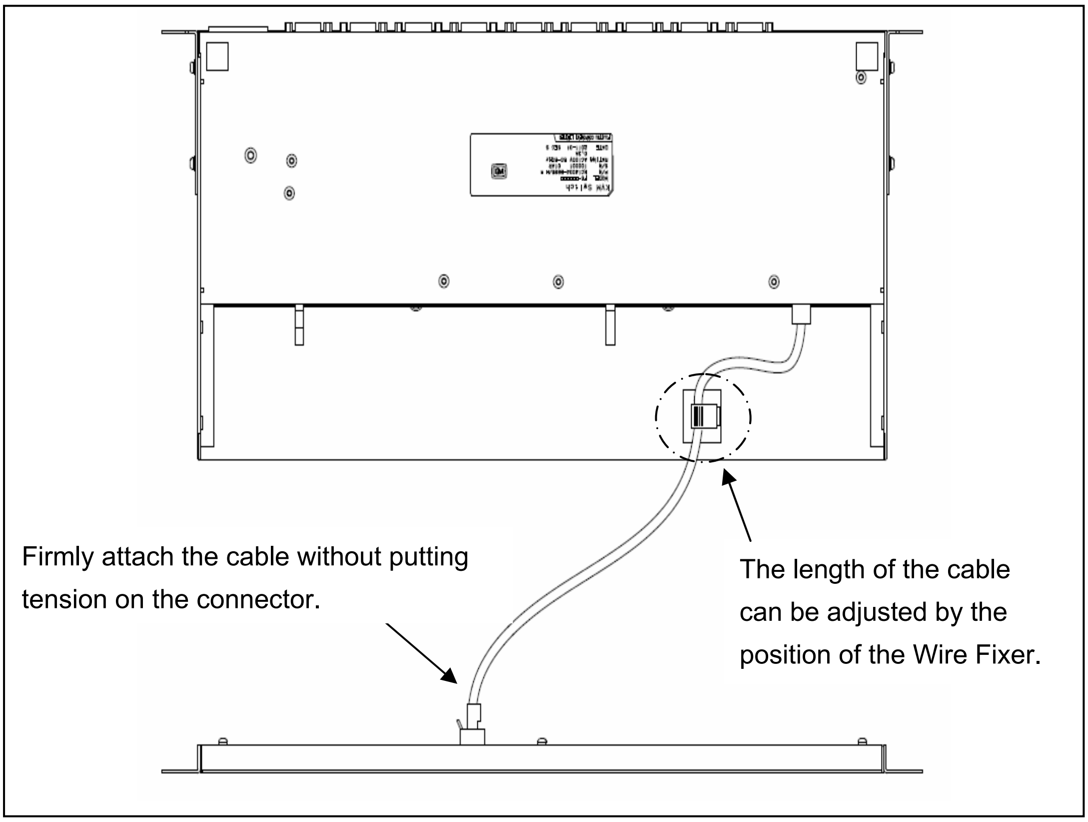


(3) Attach the device and the operation panel to the rack.



* Rack Fixing Bracket Screws are not provided.

Attach the provided Wire Fixer as required on the desired location on the rear of the device, and firmly attach the console panel connection cable to the device and console panel.



10. Cable Connection and Removal

10-1. Cable Connection

An 8 Port KVM Switch is used as an example to explain how to connect cables. The same procedures that are described in this section can be applied for 4 Port KVM Switches and 16 Port KVM Switches.

10-1-1. When a Cascade Connection is not Used (Level 1 connection)

The maximum number of servers that can be connected is eight.

(1) Connect the power cable (1) of the server to the power outlet. Make sure the server power is left OFF.

(2) Connect the keyboard connector, the mouse connector, and the monitor connector of the first server with dedicated cables (2) (must be ordered separately).

(3) Connect the connectors (3) on the other ends of the dedicated cables to the ports for server connection on the KVM Switch.

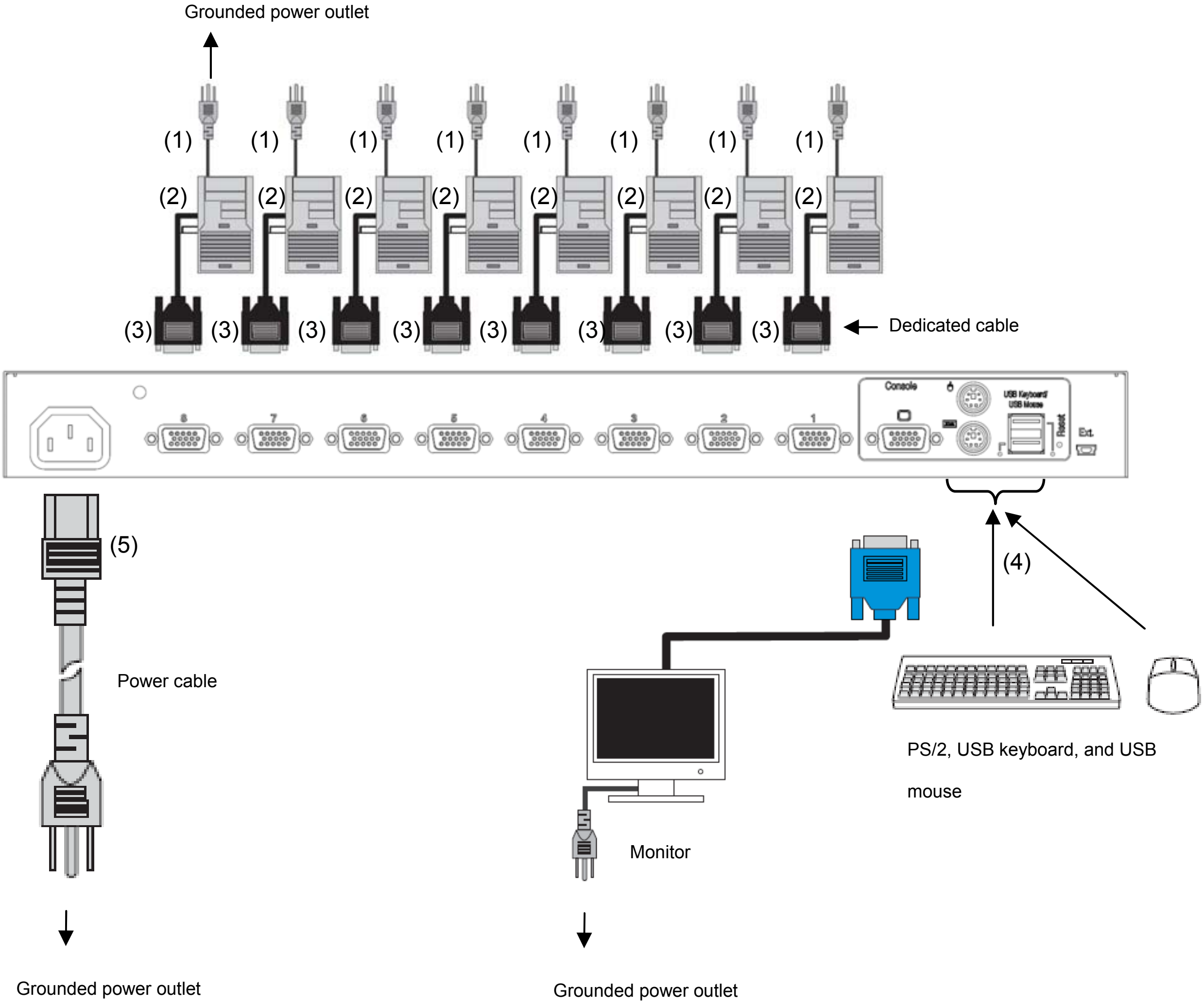
(4) Perform the same connection procedure for the remaining servers (from the second server to the eighth server). Connect the keyboard, mouse, and monitor to the [CONSOLE] ports (4).

The monitor connector is used to connect the monitor to a KVM Switch. Even if these devices are connected to both the PS/2 and USB, only the USB side operates.

(5) Connect the power cable (5) to the KVM Switch and the power outlet.

(6) Turn on the power of the monitor, and press the [RESET] switch on the KVM Switch to read the EDID information of the monitor to the KVM Switch.

(7) Turn on the power of the servers that are to be used.


Grounded power outlet
(1)
(2)
(3)
Dedicated cable
(5)
(4)
Power cable
PS/2, USB keyboard, and USB mouse
Monitor
Grounded power outlet
Grounded power outlet

10-1-2. When a Cascade Connection is Used (Level 2 connection)

When a cascade connection is used for a KVM Switch (maximum configuration: 1 master KVM Switch, 8 slave KVM Switches), up to 64 servers can be connected.

For cascade connections with a previous model, the latest KVM Switch or a previous model can be operated regardless of which is on the master or slave side.

(1) Use steps 1 to 4 as described in [10-1-1. When a Cascade Connection is not Used (level 1 connection)] to connect from 1 to 8 servers using the ports (1) for connecting the servers for level 2 (slave).

(2) Connect the dedicated cable (2) (must be ordered separately) from the port for connecting servers from level 1 (master) to the [CONSOLE] port from level 2 (slave).

*Note. Dedicated PS/2:1.8m cables are required for master and slave connections.

(3) If the slave side is to expanded, repeat the procedures described in steps 1 and 2.

*Note. Level 3 connection cannot be performed.

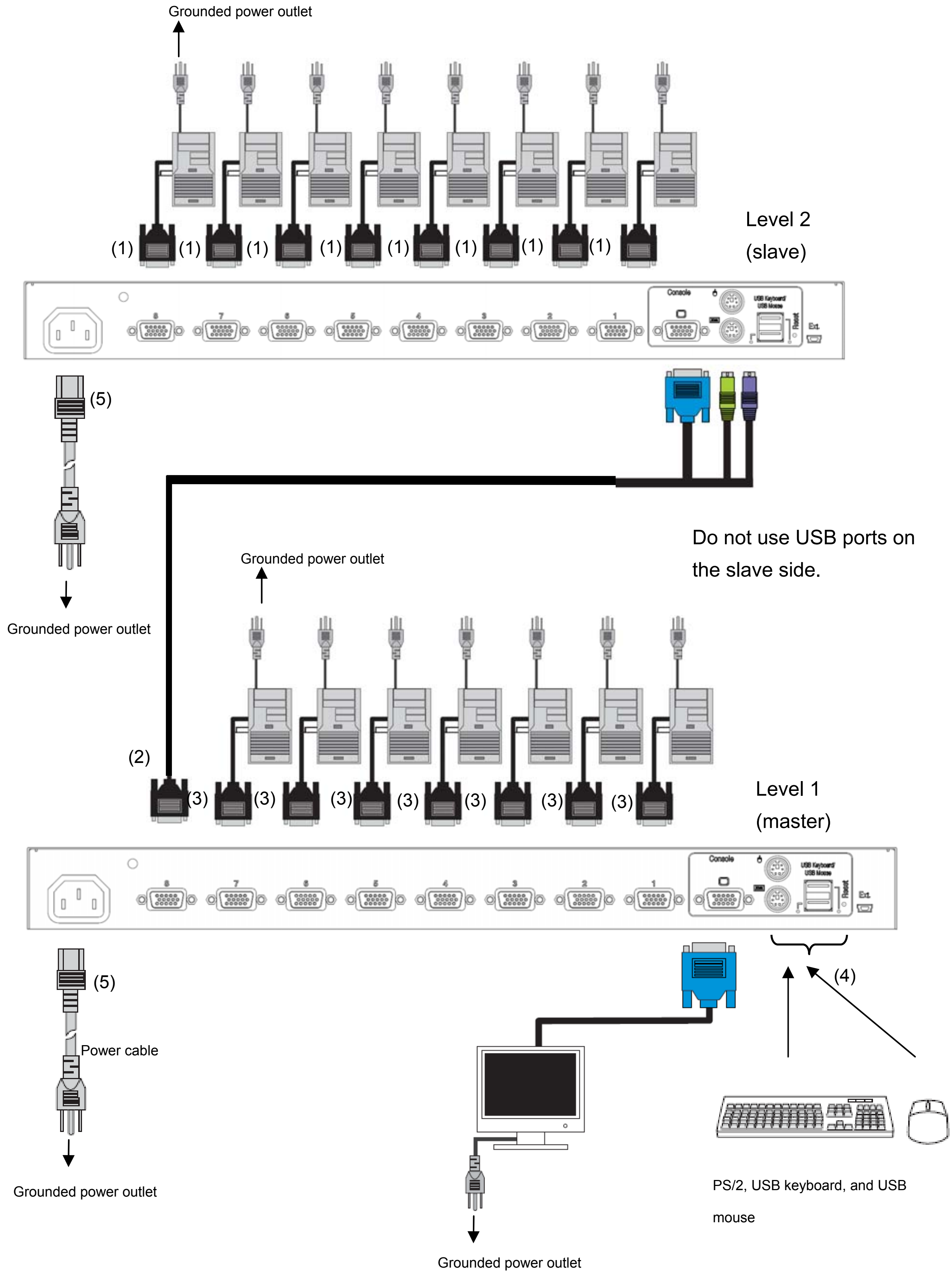
(4) Using the same procedure, connect the remaining ports (3) of level 1 (master) that are for connecting to servers to the other servers.

(5) Connect the keyboard, mouse, and monitor to the [CONSOLE] ports (4) of level 1 (master). Even if these devices are connected to both the PS/2 and USB, only the USB side operates. Do not connect a keyboard or mouse to USB ports on the slave side.

(6) Connect the power cable (5) to the KVM Switch and the power outlet. Connect the power cable of the master side to the power outlet first.

(7) Turn on the power of the monitor, and press the [RESET] switch on the master side to read the EDID information of the monitor to the KVM Switch.

(8) Turn on the power of the servers that are to be used.

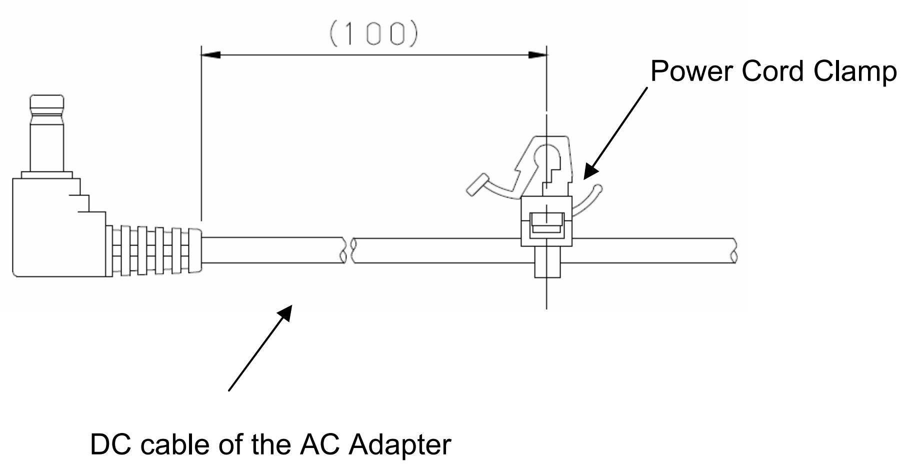

Grounded power outlet
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
Level 2
(slave)
(5)
Do not use USB ports on the slave side.
Grounded power outlet
Grounded power outlet
(2)
(3)
(3)
(3)
(3)
(3)
(3)
(3)
Level 1
(master)
(5)
(4)
Power cable
Grounded power outlet
PS/2, USB keyboard, and USB mouse
Grounded power outlet

10-2. Power Cord Clamp

10-2-1. 4 Port Type

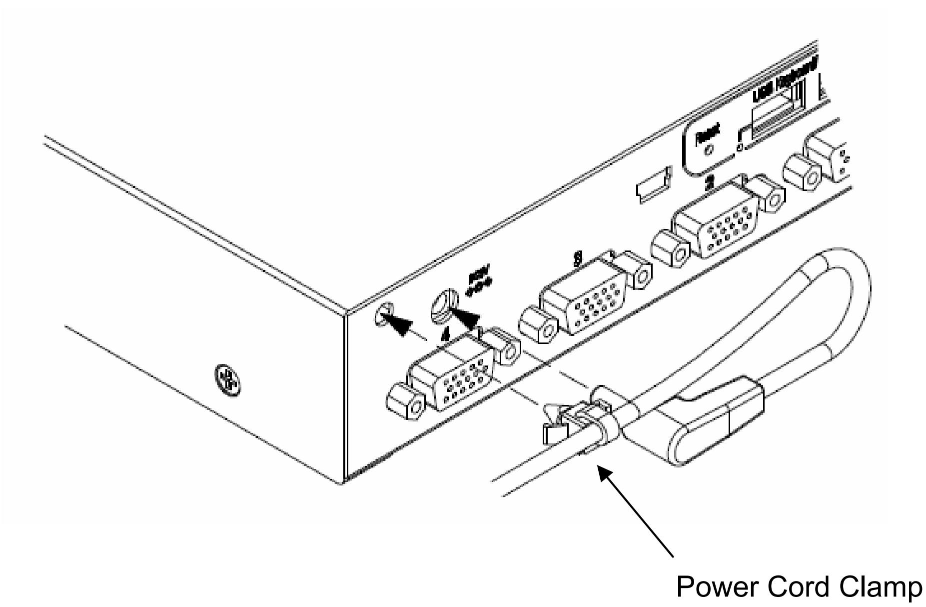
(1) Attaching the Power Cord Clamp

The provided Power Cord Clamp is used to attach the DC cable of the AC Adapter. After clamping the cable with the Power Cord Clamp, cut the excess part of the band for the Power Cord Clamp.



(2) DC cable connection

As shown in the diagram below, connect the DC cable to the KVM Switch, and insert the Power Cord Clamp into the round holes on the KVM Switch.

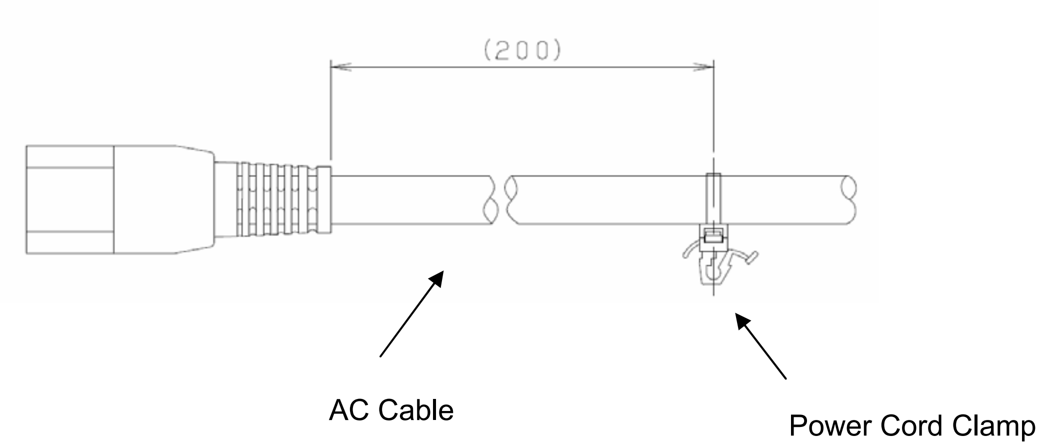


10-2-2. 8 and 16 Port Type

(1) Attaching the Power Cord Clamp

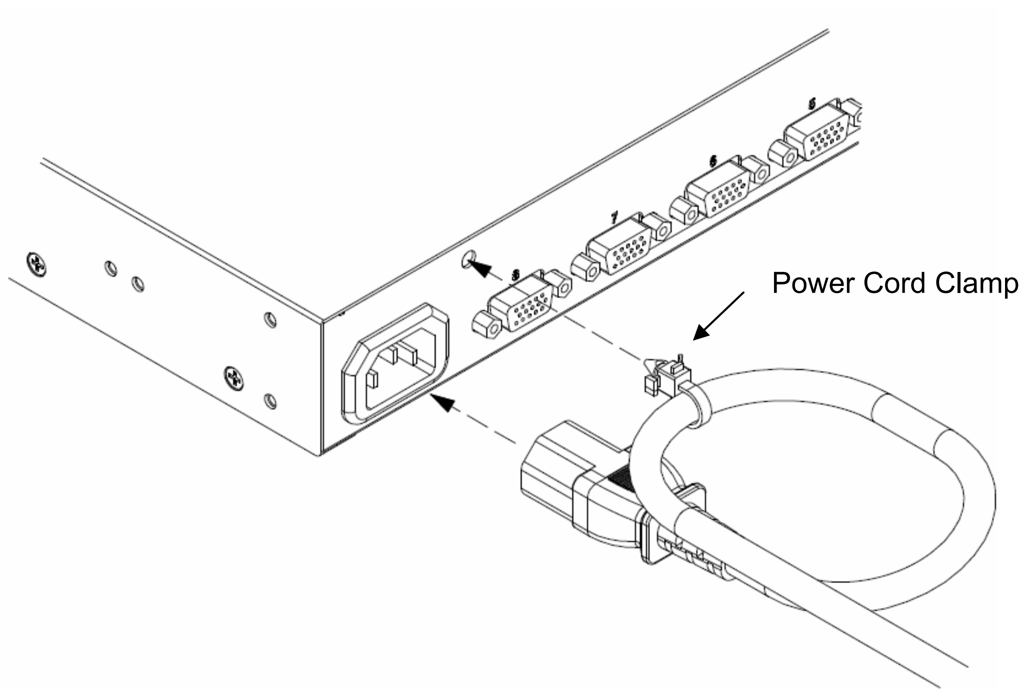
The provided Power Cord Clamp is used to attach power cord.

After clamping the cable with the Power Cord Clamp, cut the excess part of the band for the Power Cord Clamp.



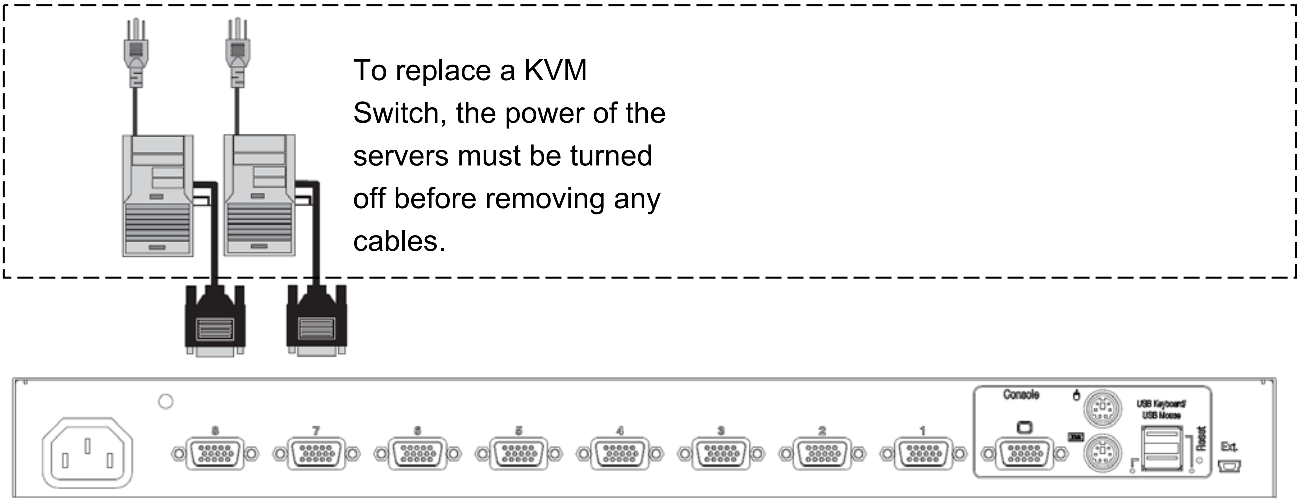
(2) DC cable connection

As shown in the diagram below, connect the DC cable to the KVM Switch, and insert the Power Cord Clamp into the round holes on the KVM Switch.



10-3. Cable Removal

Unplug all of the power plugs of devices that are affected by cable removal from the power outlets first before removing cables from the KVM Switch.



11. KVM Switch Operation

Point Perform the EDID settings first.

When a monitor is connected to a KVM Switch for the first time, the Plug and Play data (EDID data) must be set. After performing the EDID data settings, the connected monitor can be used in a suitable environment by restarting the server. In addition, because the set EDID data is emulated for all of the ports, even if a server is started without any selected ports, the connected monitor can still be used in a suitable environment.
For details about EDID settings, refer to [11-1-4 Plug and Play Data (EDID Data) Settings].

11-1. Customer Mode Settings

11-1-1. Hotkey Mode Settings

The following two modes are available for the Hotkey mode. The Hotkey mode can also be turned OFF.

MODE-1: The "SERVER SELECTION" screen or the "CUSTOMER MODE" screen is displayed

MODE-2: The "Server name" is displayed

The operations listed in the following table change the mode to the Hotkey mode and display the OSD screen.

Operation	Hotkey mode default value
(1) <Ctrl> + <Alt> + <Shift> are pressed at the same time	MODE-1
(2) <CTRL> is pressed twice in succession	MODE-2
(3) <ScrollLock> is pressed twice in succession	MODE-1
(4) The central mouse button is pressed	OFF

If <N> or the right button is pressed in MODE-1 of the Hotkey mode, the mode becomes the Customer mode. By moving the cursor to the desired mode (MODE-1, MODE-2, OFF) and pressing <Enter>, the mode can be selected. Use the arrow keys (<↑> and <↓>) to select the mode. Press <Enter> to set the mode.
The mouse can also be used to set the mode.

*Note. Although the mode can be set relatively freely (for example, "MODE-1" can be set for (1), (2), and (3) in the table above), "MODE-2" cannot be set for (1), (2), and (3) in the table above. In addition, (1), (2), and (3) cannot all be set to OFF.

*Note. To display the OSD screen, video signal input from at least one connected server is required. If the video signal cannot be input from a server due to settings such as the

power saving mode, "MODE-1" or "MODE-2" of the Hotkey mode can be used to automatically restore a server in power saving mode.

*Note. When a mouse with a central button or a wheel button is used, the central button of the mouse can be allocated as a hot key. By selecting "MODE-1" or "MODE-2" for "MOUSE CENTER BUTTON" in the OSD screen (in Customer mode), the mode can be changed to the Hotkey mode by clicking the central button of the mouse.

*Note. Pressing <Ctrl> + <Alt> + <Shift> at the same time or pressing the central mouse button can be used to exit the OSD screen even if these operations are set to "OFF" in the Hotkey mode.

*Note. When the power for all of the servers is turned off while in the Hotkey mode, the Hotkey mode automatically ends.
In addition, when the power for all of the servers is off, the mode cannot be changed to the Hotkey mode.

11-1-2. Keyboard Language Settings

If <N> or the right button is pressed in MODE-1 of the Hotkey mode, the mode becomes the Customer mode. By moving the cursor to KEYBOARD TYPE and pressing <Enter>, the KEYBOARD language settings can be changed. Use the arrow keys (<↑> and <↓>) to select the language.
Press <Enter> to set the language.

JAPANESE→ENGLISH US→ENGLISH
UK→GERMAN→FRENCH→SPANISH→SWEDISH→PORTUGUESE→CHINESE
TAIPEI→KOREAN→ITALIAN→UNIX→NORWEGIAN→BELGIAN→DANISH→JAPANESE

When a UNIX OS is used, the language settings are automatically applied.
When a Windows OS is used, this setting is disabled.

11-1-3. Easy Setting Function for the Keyboard Type

The keyboard type can be easily set when power is supplied to a KVM Switch without entering the Hotkey mode.
By operating the front panel of a KVM Switch, the keyboard type can be easily set.
Only four languages can be set; JIS/US/UK/KOR.
When the right [ServerSelection] switch, the [AutoScan] switch, and the [Reset] switch are pressed at the same time, the mode becomes the setting mode.
The language can be selected by operating the [ServerSelection] switch.
The LED display shows which language is currently selected as the following table shows.

LED display	Port 1 blinks	Port 2 blinks	Port 3 blinks	Port 4 blinks
Language	JIS	US	UK	KOR

Press the [AutoScan] switch to set the keyboard language and release the setting mode for selecting the keyboard language.

11-1-4. Plug and Play Data (EDID Data) Settings

*Note. The power of the monitor must be ON to set the EDID data.

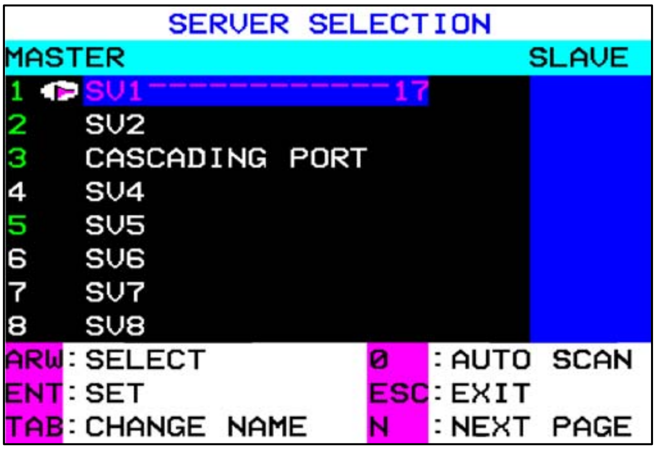
(1) Enter MODE-1 of the Hotkey mode.
(2) Press <N> or the right button of the mouse to enter the Customer mode.
(3) Move the cursor to DEFAULT MONITOR (default setting) on the right of MONITOR TYPE or to the product name of the monitor and press <ENTER>. When <ENTER> is pressed, "SCANNING" is displayed, and the KVM Switch reads the EDID data from the monitor that is connected to the [CONSOLE] port and sets the EDID data.

*Note. When the EDID data is set correctly, the name of the monitor or "PNP MONITOR" is displayed. When the monitor is not a Plug and Play monitor, the monitor display is OFF, or the monitor is not correctly connected, the EDID data cannot be read and the monitor is set as DEFAULT MONITOR (15 inch monitor, resolution: 1024x768) for the KVM Switch.

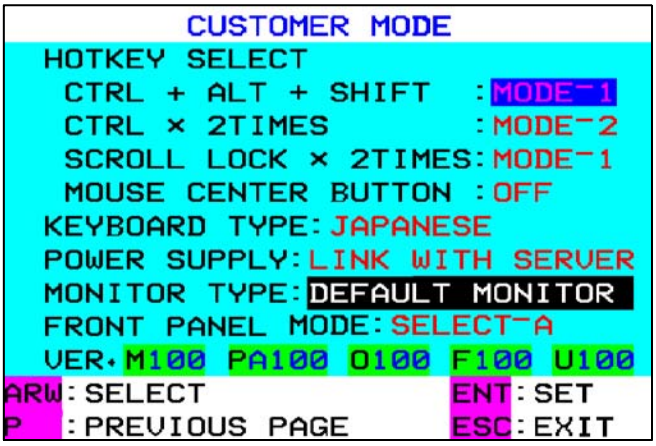
(4) Press <P> or the left button of the mouse to return to the SERVER SELECTION screen. If <ESC> or the right button of the mouse is pressed without pressing <P>, the Hotkey mode ends and the normal screen can be returned to.)
(5) Press <ESC> to end the Hotkey mode and return to the normal screen.

*Note. The EDID data can also be set by pressing the [RESET] switch while the monitor is connected (and the power of the monitor is ON).

(6) Start the server and write the EDID data.



When the <N> key is pressed   When the <P> key is pressed



MONITOR TYPE: EDID setting mode
VER.: The current F/W version

Erasing Composite Flags

Composite Sync Signals are not supported by KVM Switches. If EDID data of a composite monitor is sent to a server, the server may output a Composite Sync Signal.

To prevent a Composite Sync Signal from being output, perform the procedures in "9.4.3 Plug and Play Data (EDID Data) Settings" to automatically convert EDID data and to disable the Composite Sync Signal.

The EDID data can also not be converted by following the procedure below.

(1) Enter MODE-1 of the Hotkey mode.
(2) Press <N> or the right button of the mouse to enter the Customer mode.
(3) Move the cursor to DEFAULT MONITOR (default setting) and press <ENTER> and <SHIFT> or press <SHIFT> and the central mouse button at the same time. When either of these actions is performed, "SCANNING" is displayed, the KVM Switch reads the EDID data from the monitor that is connected to the [CONSOLE] port and sets the EDID data.

(4) Press <P> or the left button of the mouse to return to the SERVER SELECTION screen. If <ESC> or the right button of the mouse is pressed without pressing <P>, the Hotkey mode ends and the normal screen can be returned to.)

(5) Press <ESC> to end the Hotkey mode and return to the normal screen.

The following table shows how EDID is converted.

Address	Byte	Description	Contents	Value
08h 09h	2	ID Manufacture Name	FJC	00011001b 01000011b
0Ah	2	ID Product Code	6000	70h 17h
10h	1	Week&Year of Manufacture or Model Year	Model Year	FFh
11h	1		2011nen 2011-1990=21	15h
14h	1	Video Input Definition	Composite Sync Signal on Horizontal is not supported Composite Sync Signal on Green Video is not supported	If Bit7 is "0", bits "0", "1", and "2" become "0". If Bit7 is "1", the bits are not changed
7fh	1	Checksum	The 1-byte sum of all 128byte in this EDID block shall equal zero	Checksum

Point Resume Function for the Hotkey Mode

The right left mouse movement data (resume code) is sent to all of the ports and the servers exit the sleep mode. This function can be used to select the ports on the OSD display regardless of whether the server is in a normal or suspended state.

Sending of the resume code operates in the following way.

- The resume code is sent to all of the ports when AutoScan is in operation or the mode is changed to the Hotkey mode.
- The resume code is output by keyboard or mouse operation when there are no Sync signals for all of the ports while in the Hotkey mode or the AutoScan mode.
- The resume code is sent by [ServerSelection] switch operation when there are no Sync signals for all of the ports.

  Even with a cascade connection, all of the ports send the mouse data.

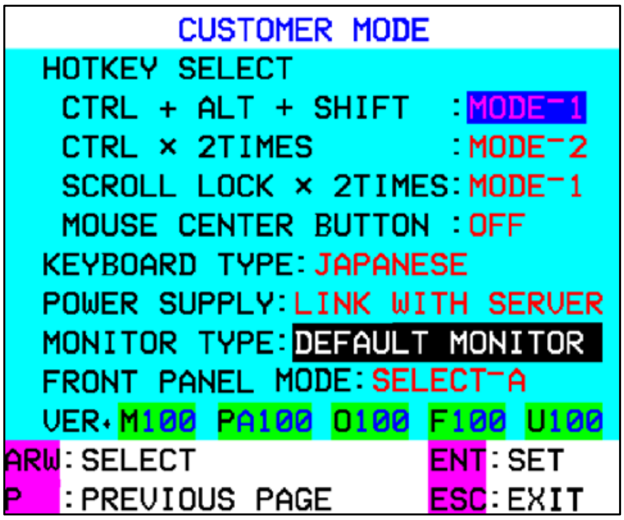
11-2. Server Selection

11-2-1. Server Switching Function Using Front Panel Operation

Point Two types of methods can be selected for the server switching function using front panel operation.

Two types of methods are available for the server switching function using front panel operation.
The switching method can be changed in the Customer mode settings on the OSD.

(1) All server scan method (default): SELECT-A
(2) UP/DOWN switching method: SELECT-B



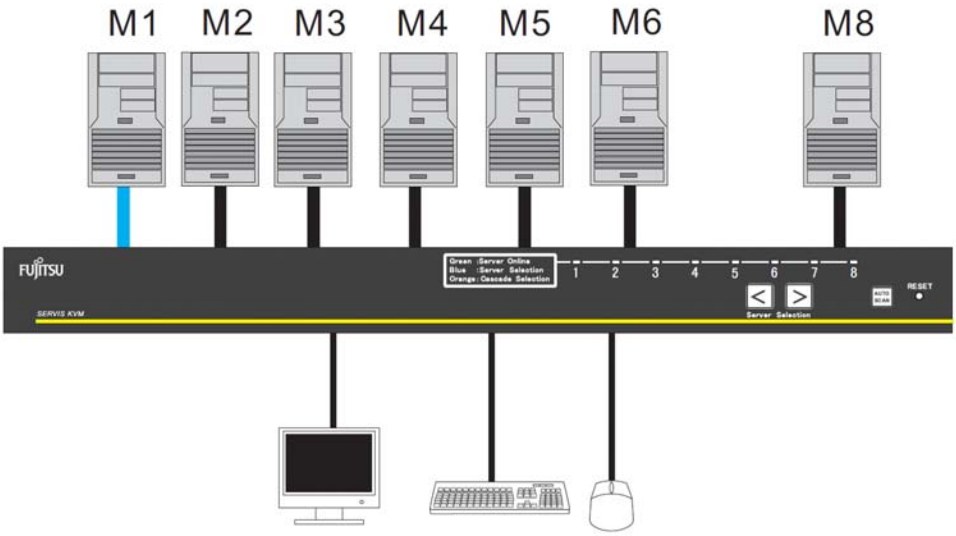
11-2-2. Server Switching Using the All Server Scan Method (SELECT-A)

i. When a cascade connection is not used

The server can be selected by pressing the [ServerSelection] switch.
When this switch is pressed, servers without power can also be selected.
When M1 (as shown in the diagram below) is selected and the [ServerSelection] switch (right) is pressed, M2 is selected.
In addition, when M1 is selected and the [ServerSelection] switch (left) is pressed, M8 is selected.

When the [ServerSelection] switch is pressed, the monitor does not display the server image first (black screen). The monitor displays "SELECTION" on the top left of the screen, and the server name is displayed under "SELECTION".
The screen is displayed after approximately three seconds (the display time varies depending on the monitor that is used).

When the [ServerSelection] switch is pressed for a long time, server quick selection can be operated.
For key typer, the time is changed by pressing the switch for a long time. (500ms=>150ms)
When using server quick selection, the monitor does not display the server image first (black screen). The monitor displays "SELECTION" on the top left of the screen, and the server name is displayed under "SELECTION".
When the key that is pressed is released, the server that is displayed on the OSD is selected, and the image is displayed on the monitor after a few seconds.



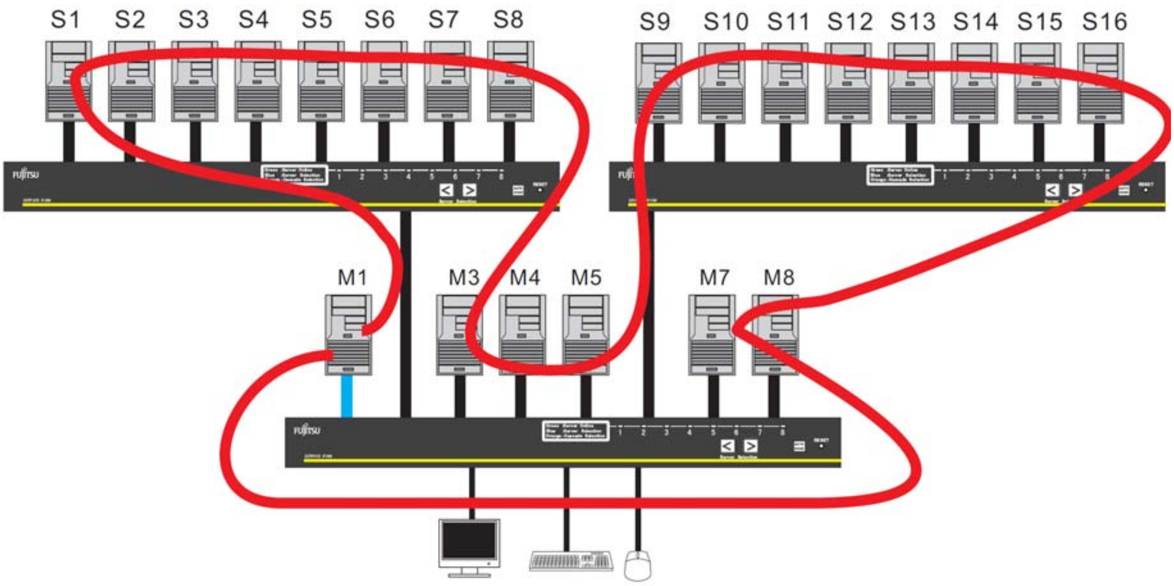


ii. When a cascade connection is used

The server can be selected by pressing the [ServerSelection] switch.
When this switch is pressed, servers without power can also be selected.

When M1 (as shown in the diagram below) is selected and the [ServerSelection] switch (right) is pressed, S1 is selected.
In addition, when M1 is selected and the [ServerSelection] switch (left) is pressed, M8 is selected.

When the [ServerSelection] switch is pressed for a long time, key typer and server quick selection can be operated.
If the eighth port of the master side is being used for a cascade connection, the selection operation is stopped at the port with the largest number on the slave side that is connected to the eighth port of the master side.
If the first port of the master side is being used for a cascade connection, the selection operation is stopped at the first port on the slave side that is connected to the first port of the master side.
In addition, only server selection on the cascading side can be performed by [ServerSelection] switch operation on the cascading side.



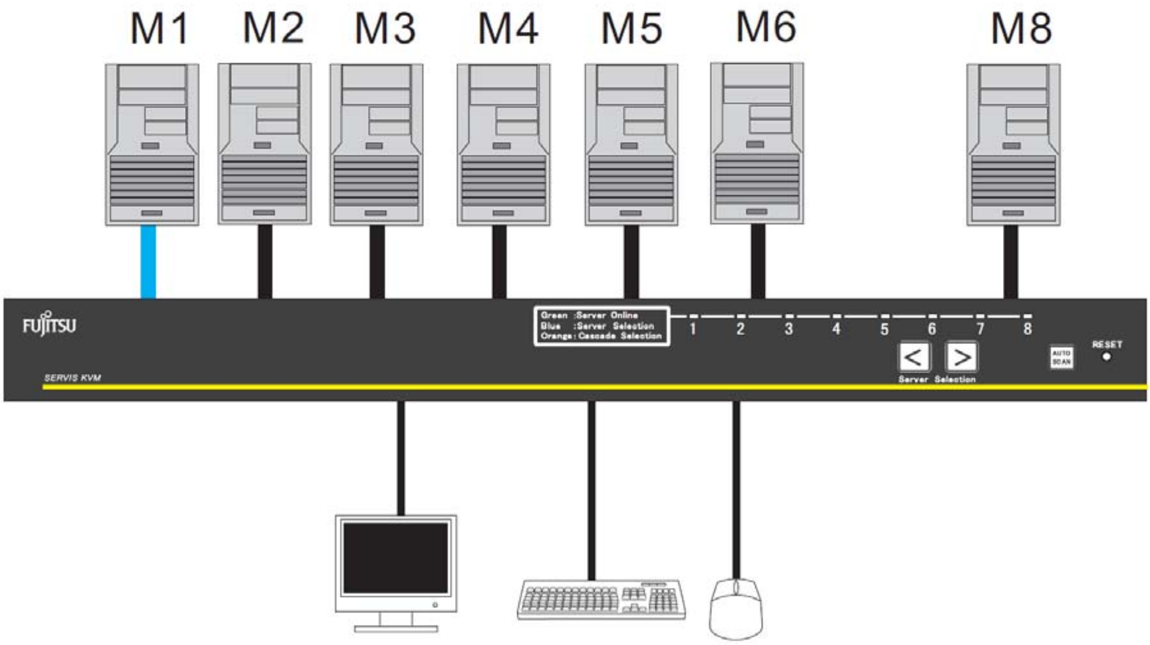
11-2-2. Server Switching Using the UP/DOWN Switching Method (SELECT-B)

i. When a cascade connection is not used

The server can be selected by pressing the [ServerSelection] switch.
When this switch is pressed, servers without power can also be selected.

When M1 (as shown in the diagram below) is selected and the [ServerSelection] switch (right) is pressed, M2 is selected.
In addition, when M1 is selected and the [ServerSelection] switch (left) is pressed, M8 is selected.

Key typer (server quick selection) is not enabled by pressing the [ServerSelection] switch for a long time.



ii. When a cascade connection is used

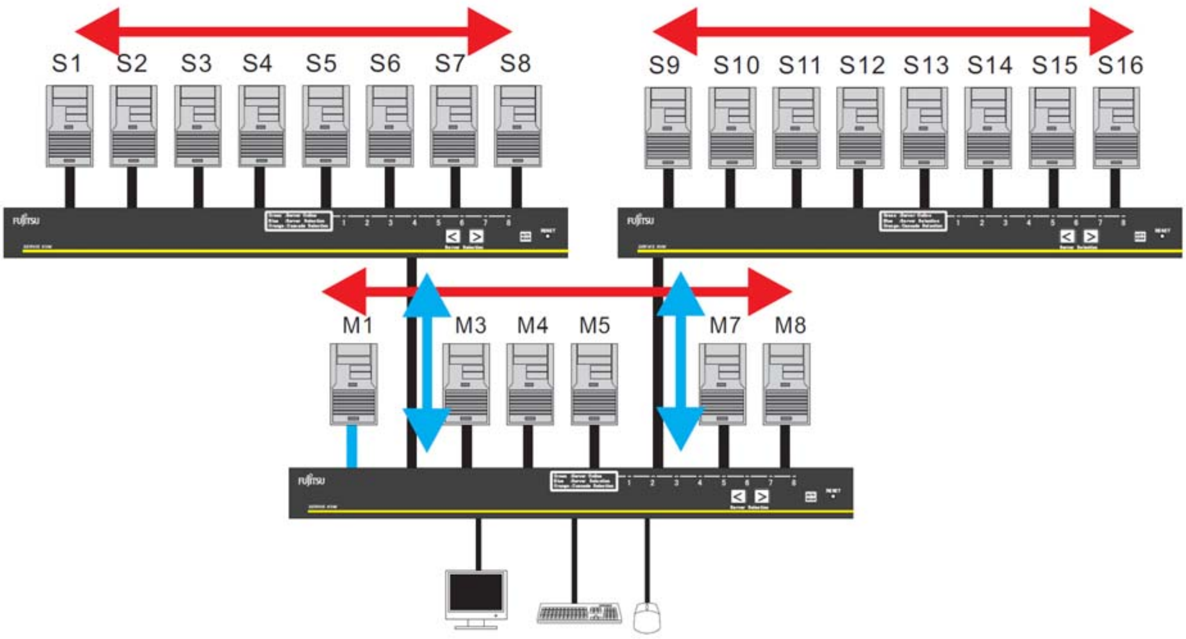
The server can be selected by pressing the [ServerSelection] switch.
When this switch is pressed, servers without power can also be selected.

When M1 (as shown in the diagram below) is selected and the [ServerSelection] switch (right) is pressed, from S1 to S8 for the previously selected server can be selected. (S1 is the default setting)
In addition, when M1 is selected and the [ServerSelection] switch (left) is pressed, M8 is selected.

Key typer (server quick selection) is not enabled by pressing the [ServerSelection] switch for a long time.

When ports in a cascade connection are selected by operating the front panel of the master and the right and left [ServerSelection] switches are pressed at the same time, the selection is changed to the connected cascade destination. After the selection is changed to the connected cascade destination, the server for the cascade destination can be selected by operating the [ServerSelection] switch.
By pressing the right and left [ServerSelection] switches at the same time one more time, the selection is changed to the master.

In addition, only server selection on the cascading side can be performed by [ServerSelection] switch operation on the cascading side.



11-2-4. Server Switching Function Using OSD Operation

Each server can be selected by using the keyboard and mouse (Hotkey mode).
When the power of the server that is being selected is OFF, the selection state is maintained. If all of the servers are OFF, the first server that is turned on is selected. In addition, unconnected ports for servers and the ports for servers that are OFF can be selected. However, nothing is displayed for these ports.

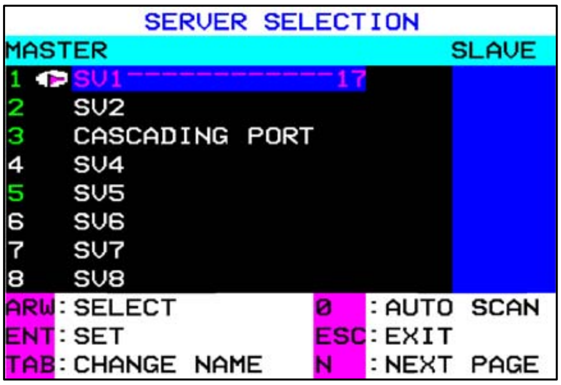
*Note. An 8 Port KVM Switch is used as an example to explain how servers can be switched. The same operations that are described in this section can be applied for 4 Port KVM Switches and 16 Port KVM Switches.

In the Hotkey mode, the OSD screen is displayed on the monitor. Ports can be selected on the OSD.

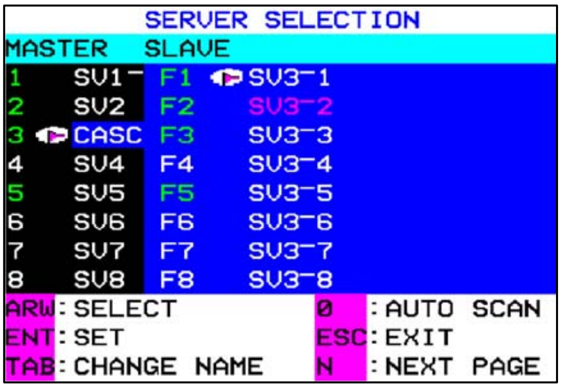
*Note. Input from the keyboard and mouse to the server is not possible in the Hotkey mode.

MODE-1 of the Hotkey Mode

The following OSD screens are displayed in "MODE-1" of the Hotkey mode.
The "ScrollLock" LED of the connected keyboard blinks on and off at 400ms intervals.
In addition, the front LED (for selected ports) of a KVM Switch blinks blue at 400ms intervals.
For a cascade connection, the LEDs of selected ports on the master side blink orange at 400ms intervals.



When ports that are not used for a cascade connection are selected

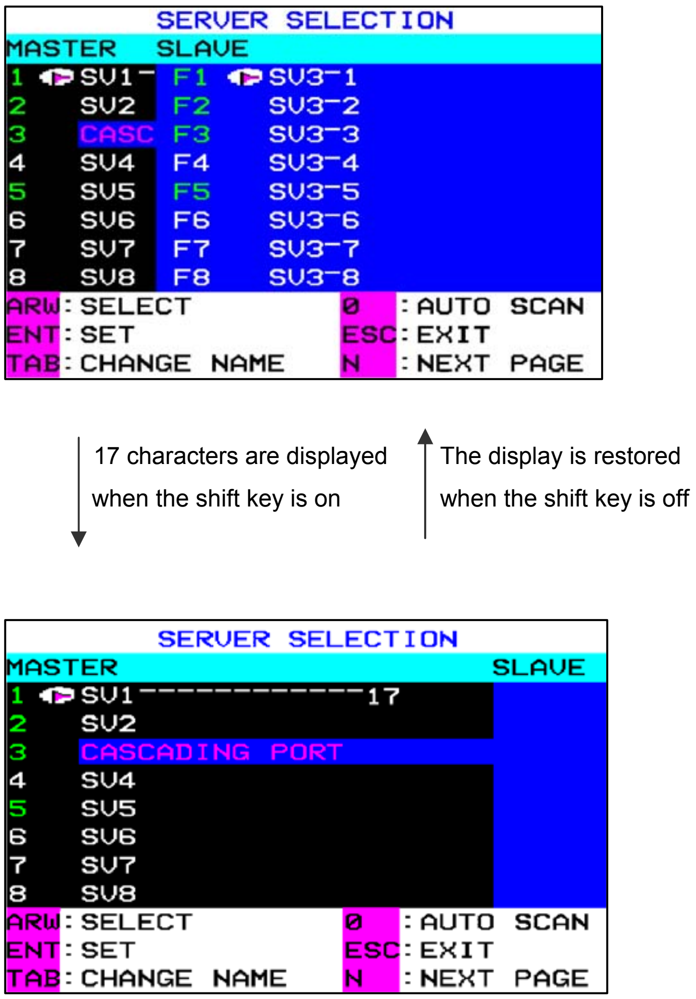


When ports that are used for a cascade connection are selected

OSD example for an 8 Port KVM Switch (the actual displayed contents may differ)

i. Screen explanation

- The KVM Switch status is displayed in the center on the left of the screen (the background color is black)
- The status of the KVM Switch ports that are connected in a cascade connection on the slave side is displayed in the center on the right of the screen (the background color is blue)
- ▶ indicates the currently selected port in purple. <↑>, <↓>, <←>, and <→> can be used to display the selected server.
- The bottom part of the screen displays simple explanations for the key operations.
- Ports [1-8, F1-F8] of servers with ON as the power status are displayed in green.
- If ports that are not used in a cascade connection are selected, the server name is displayed with 17 characters on the master side. Nothing is displayed on the slave side.
- If ports that are used in a cascade connection are selected, the server name is displayed with 4 characters on the master side and 17 characters on the slave side.
- As shown by the screen below, when the shift key is on, the server name can be displayed with 17 characters on the master side.



ii. Server switching method using the OSD screen

1: Selection by using the cursor key

- Use <↑>, <↓>, <←>, and <→> to select the ports by moving the character string (displayed in purple) up, down, right, and left.
- Press <ENTER> to set the selection and end MODE-1 of the Hotkey mode. After switching, the server name is displayed on the upper left of the screen in approximately three seconds.
  (The selection can also be set by pressing the central button of the mouse or by pressing the left and right buttons at the same time.)
- Press <ESC> to cancel the selection and end the Hotkey mode.
  (The selection can also be canceled by pressing < Ctrl> + <Alt> + <Shift> at the same time)

2: Direct selection using the numeric/function keys

- <1> to <8> is used for each port number of the master side and <F1> to <F8> is used for each port number on the slave side.
- When any numbers from <1> to <8> are pressed, a master side port is selected.
- When any characters from <F1> to <F8> are pressed, a slave side port is selected.

  *Note. When ports that are not used in a cascade connection are selected, the ports are set and the Hotkey mode ends. When ports that are used in a cascade connection are selected, the ports are not set and the KVM Switch waits for the selection input of the ports on the slave side.

  Example 1: When port 1 of the master is not connected to a slave, the port is set by pressing <1>.

  Example 2: When port 1 of the master is connected to a slave, the port is not set by pressing <1>. The port is set by pressing one of the characters from <F1> to <F8>.

  *Note. From <F1> to <F8> can also be operated by pressing <F> + <1> to <F> + <8>.

  *Note. For a 16 port type, from <1> to <9> is supported for each port number. On the slave side, from <F1> to <F12> is supported for each port number. For ten or more ports, ports can be selected by using key combinations.

  Example 1: When selecting port 16
  <1> + <6>

  Example 2: When selecting port 16 on the slave side
  <F> + <1> + <6>

3: Selection by using the mouse

- Servers can be selecting by using the wheel on the mouse. When the central button (wheel button) or both the right and left buttons at the same time are pressed, the selection is set and MODE-1 of the Hotkey mode ends. After switching, the server name is displayed on the upper left of the screen in approximately three seconds (for a mouse with a wheel button).
- Press the right button to select the slave side on the SERVER SELECTION screen (for a cascade connection). When a cascade connection is not used, the mode is changed to the Customer mode.
- Press the left button to select the master side on the SERVER SELECTION screen (for a cascade connection). In addition, press the left button in the Customer mode to return to the SERVER SELECTION screen.

iii. AutoScan mode

The mode becomes the AutoScan mode when <0> is pressed. Refer to "11-2-5. AutoScan mode" for more details.

iv. Registering and changing the server name

(1) Use the console key to register the server name and to change the ports.

(2) Press <Tab>.

(3) The character string becomes yellow and the mode changes to the server name input mode.

(4) Enter the server name on the keyboard and press <Enter> to register or change the name.

Pressing <Del> deletes one character, and pressing <BS> goes back one space.

When <ESC> is pressed, input is canceled and the screen that was displayed before registering or changing the server name is returned to.

Up to 17 characters can be entered for a server name.

The following 46 characters can be used to register a server name:

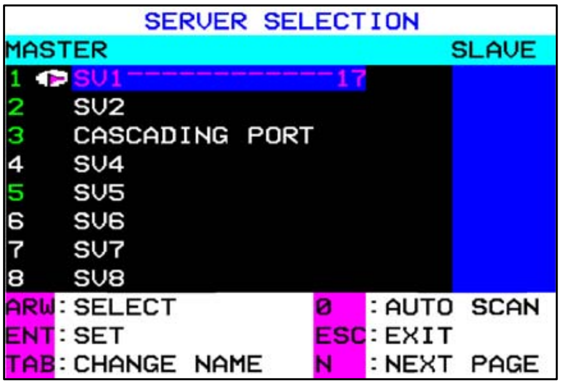
ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890,./[]:+×- and spaces.

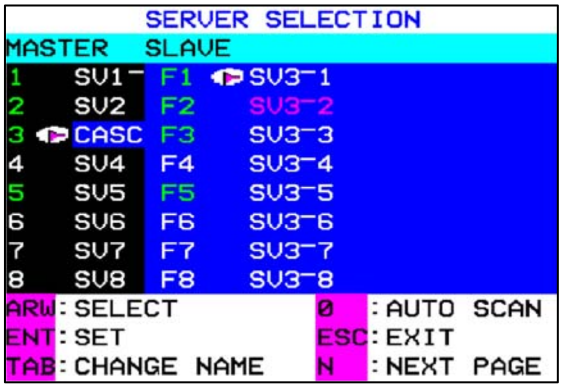
In the server name input mode, press <Ctrl> + <C> to copy a server name and press <Ctrl> + <V> to paste the copied server name.

(5) The following keyboard operations can be used to return the server names to their factory settings.

- Press the left <Ctrl> key + the right <Shift> key + <Tab> at the same time while the OSD is displayed
- Press the right <Ctrl> key + the left <Shift> key + <Tab> at the same time while the OSD is displayed

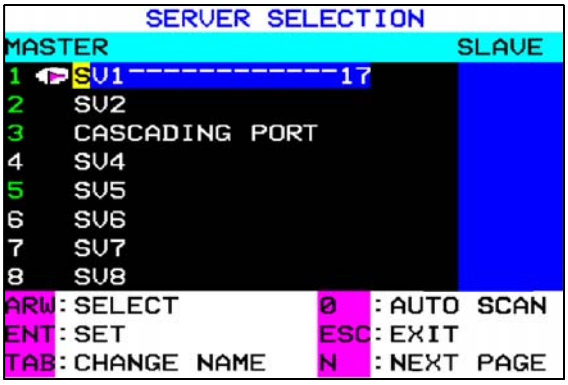
Note: When a cascade connection is used, the above information is registered on the master side.

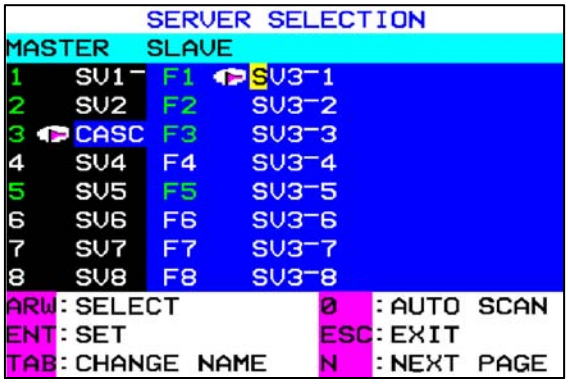




Registration by pressing the TAB key

Registration by pressing the TAB key





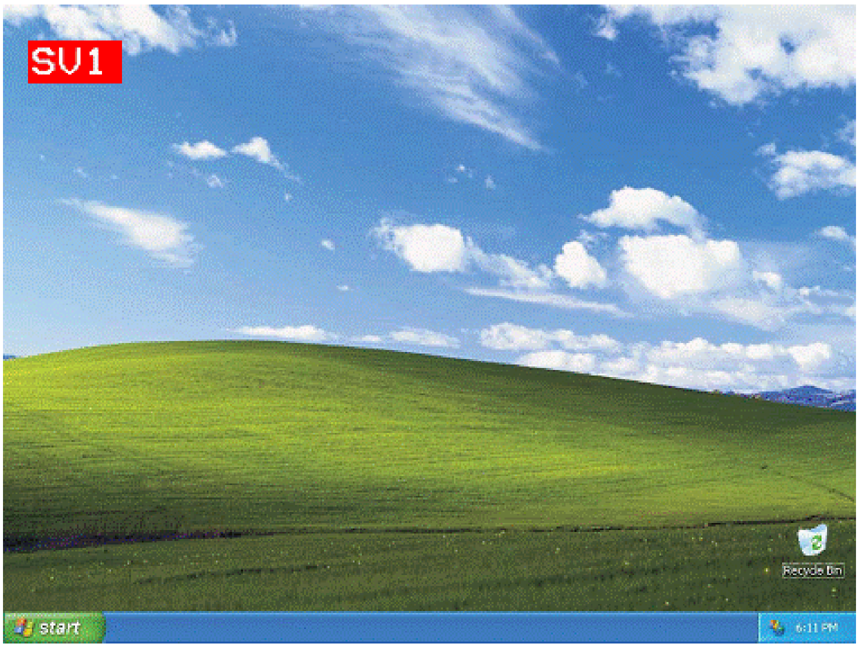
Example of changing a registered name on the master side

Example of changing a registered name on the slave side

Point Using "Appendix. Server Name Record Sheet" makes registering server names more convenient.

"MODE-2" of the Hotkey Mode

For "MODE-2" of the Hotkey mode, the server name is displayed on the top left of the OSD.
The "ScrollLock" LED of the connected keyboard blinks on and off at 400ms intervals.
In addition, the front LED (for selected ports) of a KVM Switch blinks blue at 400ms intervals.
For a cascade connection, the LEDs of selected ports on the master side blink orange at 400ms intervals.



i. Screen explanation

The server name is displayed on the top left of the OSD.
Before switching, the background of characters is displayed in red.
When the background of characters is displayed in red, key input and mouse operation to the server cannot be used.
After switching, the background of characters changes to blue and the server name is displayed in approximately three seconds.

ii. Server switching method using the OSD screen

1: Selection by using the cursor key

- Use <←> and <→> to select a server. (A server without power cannot be selected)
- Press <ENTER> to set the selection and end MODE-1 of the Hotkey mode. After switching, the server name is displayed on the upper left of the screen in approximately three seconds.
  (The selection can also be set by pressing the central button of the mouse or by pressing the left and right buttons at the same time.)
- Press <ESC> to cancel the selection and end the Hotkey mode.
  (<Ctrl> + <Alt> + <Shift> are pressed at the same time.)

iii. Direct selection using the numeric/function keys

- <1> to <8>is used for each port number of the master side and <F1> to <F8>is used for each port number on the slave side.
- When any numbers from <1> to <8> are pressed, a master side port is selected.
- When any characters from <F1> to <F8> are pressed, a slave side port is selected.

*Note. When ports that are not used in a cascade connection are selected, the ports are set and the Hotkey mode ends. When ports that are used in a cascade connection are selected, the ports are not set and the KVM Switch waits for the selection input of the ports on the slave side.

Example 1: When port 1 of the master is not connected to a slave, the port is set by pressing <1>.

Example 2: When port 1 of the master is connected to a slave, the port is not set by pressing <1>. The port is set by pressing one of the characters from <F1> to <F8>.)

*Note. From <F1> to <F8> can also be operated by pressing <F> + <1> to <F> + <8>.

*Note. For a 16 port type, from <1> to <9> is supported for each port number. On the slave side, from <F1> to <F12> is supported for each port number.

(For keyboards with function keys that go up to <F13> or more, up to whatever function key is the highest on the keyboard is supported.)

For ten or more ports, ports can be selected by using key combinations.

Example 1: When selecting port 16

<1> + <6>

Example 2: When selecting port 16 on the slave side

<F> + <1> + <6>

3: Selection by using the mouse

The server can be switched by pressing the right mouse button or <→> in order from the top or by pressing the left mouse button or <←> to move in the opposite direction. Unconnected ports and servers without power are skipped.

Press the central mouse button or the right and left button at the same time to set the selection and end MODE-2 of the Hotkey mode.

iii. AutoScan mode

The mode becomes the AutoScan mode when <0> is pressed. Refer to "11-2-5. AutoScan mode" for more details.

11-2-5. AutoScan Mode

The mode becomes the AutoScan mode when <0> is pressed in the Hotkey mode or the [AutoScan] switch is pressed on the front panel.

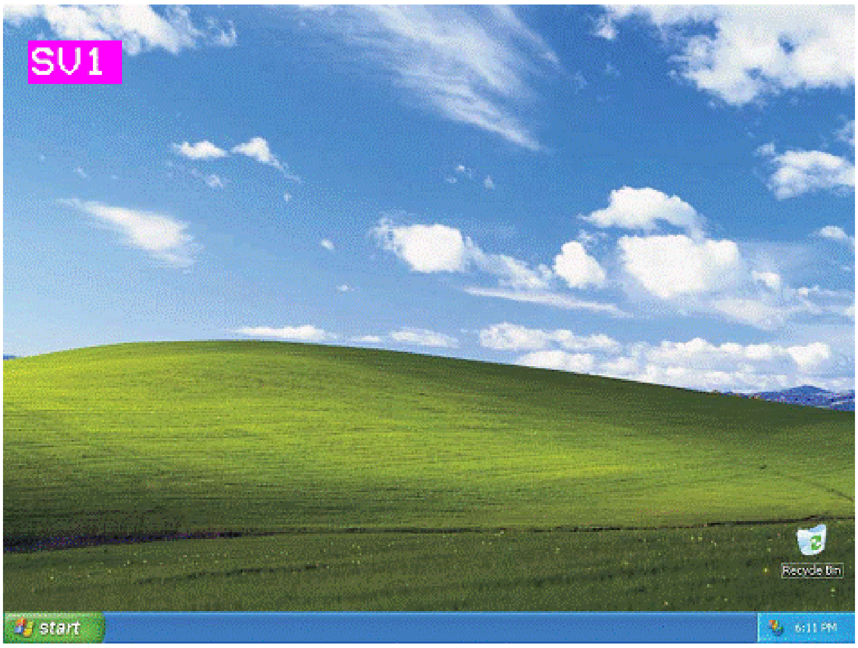
The name of the server is displayed in the top left on the OSD and the "ScrollLock" LED of the connected keyboard blinks on and off at 400ms intervals.

In addition, the front LED (for selected ports) of a KVM Switch blinks blue at "Timing 1" intervals.

For a cascade connection, the LEDs of selected ports on the master side blink orange at "Timing 1" intervals.

Timing 1

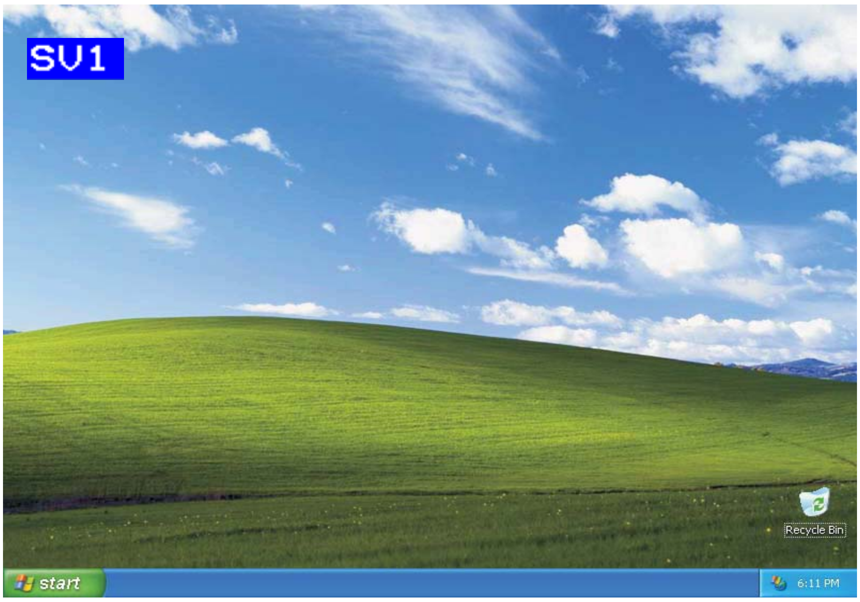




The background of server name characters becomes pink. Ports of servers with power can be automatically switched at fixed intervals (the default value is ten seconds). The switching interval can be set to 3, 5, 10, 20, 40, or 60 seconds. Pressing <↑> reduces the time and pressing <↓> increases the time. Note that key input and mouse operation to the server cannot be used in the AutoScan mode.
When the [AutoScan] switch, <Enter>, the left mouse button, or the central mouse button is pressed, the current screen is selected and the AutoScan mode ends.
When either the <ESC>, <Ctrl> + <Alt> + <Shift> buttons are pressed at the same time or the right mouse button is pressed, the previous screen when the AutoScan mode was started is displayed and the AutoScan mode ends.

11-3. Constant Server name display on the OSD

If <ScrollLock> or <NumLock>is pressed twice in succession while holding the <Shift> key down, the server name of the selected ports can be always displayed on the OSD.



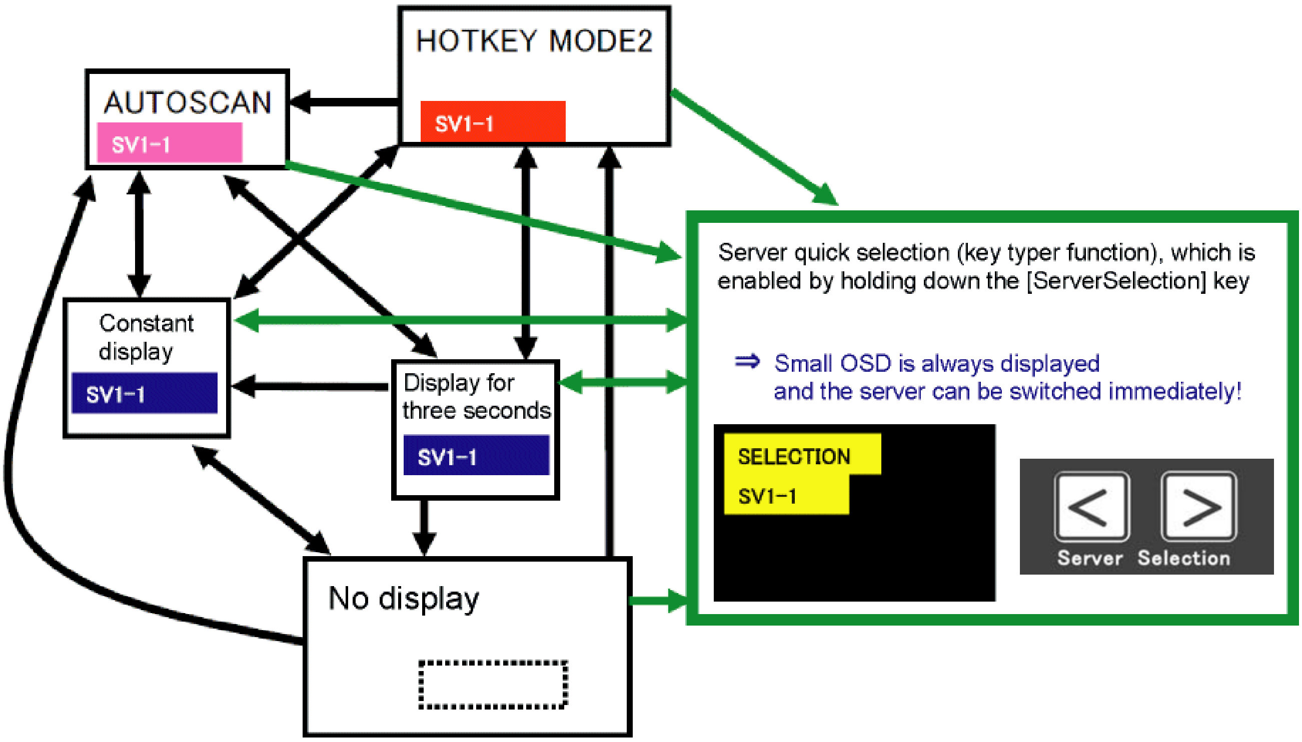
The server name is not displayed in the initial state of a KVM Switch.
The server name is not displayed when operations are preformed while the constant server name display is enabled.
Always-on display/non display settings are retained once they are changed.

*Note. Even if <ScrollLock> or <NumLock> is pressed twice in succession while holding the <Shift> key down in MODE-1 or MODE-2 of the Hotkey mode, the constant server name display settings cannot be changed.

Point For the constant server name display, the settings can be changed without changing to the Hotkey mode.

11-4. Small Window OSD (Upper Left Screen)

The transition to the small window OSD on the upper left of the screen is shown below.



*Note. When the screen is in sleep mode, it takes a few seconds for the OSD (image) to display (the display time varies depending on the monitor).
When the OSD is frequently changed by operations such as server quick selection, the monitor server selection status cannot be confirmed on the OSD while the OSD image is not displayed on the monitor.

11-5. Supplying Power to a KVM Switch

There are two methods available to supply power to a KVM Switch.

i. POWER SUPPLY:ALWAYS ON
The power is constantly supplied to a KVM Switch from a power outlet.

ii. Server Synchronization (LINK WITH SERVER)
The power is supplied to a KVM Switch from a power outlet at the same time as a server is turned on (except for some monitoring circuits). At least one server is required.

The default setting is the POWER SUPPLY:ALWAYS ON method. The power supply method can be changed by the "POWER SUPPLY" item on the OSD.
In addition, the power supply method can also be changed by pressing [AUTOSCAN] and [RESET] on the front panel at the same time.

Point Two methods are available to be set as the desired power supply method for a KVM Switch.

11-6. Port 1 Fixed Mode Setting

"Port 1 Fixed Mode", which makes port 1 always active while power is supplied to a KVM Switch, can be set.
Even when the power of servers other than the port 1 server are turned ON, the port 1 selection is retained.

Setting Method

(1) Connect the AC Adapter to the KVM Switch, and supply power to the KVM Switch.
While setting this mode, do not connect any other devices (such as a keyboard, mouse, monitor, and servers) except for the AC Adapter. (For 8 and 16 port type KVM Switches, use AC Cables for connection.)

(2) Press the [AutoScan] switch on the front panel for ten or more seconds.
The LED (port 1) on the control panel blinks blue for the first five seconds that the switch is pushed.
For the next five seconds, the LED (port 1) on the control panel blinks orange.

(3) After the [AutoScan] switch is pressed for 10 seconds, "Port 1 Fixed Mode" is set and the LED (port 1) on the front panel blinks blue.
After ten seconds have elapsed, the state returns to the state before the settings were performed. The set mode is retained even when the power of the KVM Switch is turned OFF.

To return from "Port 1 Fixed Mode" to "Normal Mode", perform steps (1) to (3) that are listed above.
The LED (port 4) on the control panel blinks blue when "Normal Mode" is set. (For an 8 Port KVM Switch, the LED of port 8 blinks blue. For a 16 Port KVM Switch, the LED of port 16 blinks blue.)

Point Do not connect any other devices except for AC Adapters (or AC Cables) while performing this setting.

12. Specifications

Item		Specifications			
Name		4 Port KVM Switch		8 Port KVM Switch	
Model		FS-1104AU	FS-1104MU	FS-1108AU	FS-1108MU
ORACLE (SUN) server support		-	Supported	-	Supported
Number of connectable servers		Maximum: 4 Can be increased by using a cascade connection		Maximum: 8 Can be increased by using a cascade connection	
Selection method		SELECT switch, OSD (Hotkey mode)			
Server interface specifications	PS/2 keyboard	PS/2 keyboard interface (OADG compliant)			
	PS/2 mouse	PS/2 mouse interface (OADG compliant)			
	USB	USB(Full Speed HID Composite)			
Console port connector	Keyboard I/F	PS/2, Mini DIN 6P female ×1 (purple)			
	Mouse I/F	PS/2, Mini DIN 6P female ×1 (green)			
	MONITOR	Mini D-SUB 15P female ×1 (blue)			
	USB console	USB keyboard, mouse (Low, Full Speed), hub 2 USB connectors The maximum number of connectable devices is as follows: - Keyboards: 2 - Mouse devices: 3 - Hubs: 1			
Host port		Mini D-SUB 15P female ×4 (black)		Mini D-SUB 15P female ×8 (black)	
OSD mode		Manual (Hotkey) mode / AutoScan mode			
AutoScan function		The server screens are automatically changed at a frequency rate of 3/5/10(default value)/20/40/60 seconds			
Monitor resolution Refresh rate		1920 x 1200 (maximum) 60Hz			
Monitor Plug and Play function		VESA DDC2B compliant			
Power/ Power current		DC5V/1.6A (AC100V/0.23A) (AC240V/0.14A)		AC100V/0.25A AC240V/0.13A	
Maximum current leakage (power specifications)		0.1mA (for AC100V)		0.4mA (for AC132V)	

Suppliable current for the keyboard/mouse from the console port	PS/2 keyboard 150mA (MAX) PS/2 mouse 150mA (MAX) USB keyboard 300mA (MAX) USB mouse 300mA (MAX)	
Operating environment temperature/humidity	5 to 40℃/ 20 to 80%RH	
Storage temperature	-20 to 60℃ / 8 to 85%RH	
Maximum wet-bulb temperature	25℃ or lower during operation 46℃ during inoperation, shipment, or storage	
Configuration	Metal case, coat (off black)	
External dimensions (W×D×H) (including protruding objects)	195×114×40mm	437×214×41mm
Mass	0.8kg	2.5kg
Appended products	AC Adapter x 1 AC Cable [1m] x 1 Power Cord Clamp x 1 User's Manual x 1	AC Cable [2m] x 1 Power Cord Clamp x 1 Wire fixer x 1 Rack Fixing Bracket (Large) x 2 Rack Fixing Bracket (Small) x 2 Rack Fixing Bracket Screw x 10 User's Manual x 1

Item		Specifications	
Name		16 Port KVM Switch	
Model		FS-1116AU	FS-1116MU
ORACLE (SUN) server support		-	Supported
Number of connectable servers		Maximum: 16 Can be increased by using a cascade connection	
Selection method		SELECT switch, OSD (Hotkey mode)	
Server interface specifications	PS/2 keyboard	PS/2 keyboard interface (OADG compliant)	
	PS/2 mouse	PS/2 mouse interface (OADG compliant)	
	USB	USB(Full Speed HID Composite)	
Console port connector	Keyboard I/F	PS/2, Mini DIN 6P female ×1 (purple)	
	Mouse I/F	PS/2, Mini DIN 6P female ×1 (green)	
	MONITOR	Mini D-SUB 15P female ×1 (blue)	

	USB console	USB keyboard, mouse (Low, Full Speed), hub 2 USB connectors The maximum number of connectable devices is as follows: - Maximum total number of keyboards and mouse devices: 4 - Maximum number of hubs: 1 level
Host port		Mini D-SUB 15P female ×16 (black)
OSD mode		Manual (Hotkey) mode / AutoScan mode
AutoScan function		The server screens are automatically changed at a frequency rate of 3/5/10(default value)/20/40/60 seconds
Monitor Resolution Refresh rate		1920 x 1200 (maximum) 60Hz
Monitor Plug and Play Function		VESA DDC2B compliant
Power/ Power current		AC100V/0.30A AC240V/0.15A
Maximum current leakage (power specifications)		0.15mA (for AC100V)
Suppliable current for the keyboard/mouse from the console port		PS/2 keyboard 150mA (MAX) PS/2 mouse 150mA (MAX) USB keyboard 300mA (MAX) USB mouse 300mA (MAX) Note that the total does not exceed 500mA
Operating environment temperature/humidity		5 to 40℃ / 20 to 80%RH
Storage temperature		-20 to 60℃ / 8 to 85%RH
Maximum wet-bulb temperature		25℃ or lower during operation 46℃ during inoperation, shipment, or storage
Configuration		Metal case, coat (off black)
External dimensions (W×D×H) (including protruding objects)		437×214×41mm
Mass		2.8kg
Appended products		AC Cable [2m] x 1 Power Cord Clamp x 1 Wire fixer x 1 Rack Fixing Bracket (Large) x 2 Rack Fixing Bracket (Small) x 2 Rack Fixing Bracket Screw x 10 User's Manual x 1

Product Model Number

Name	Model number	Product ID	Remarks
4 Port KVM Switch	FS-1104AU	NC14004-B895-R	
8 Port KVM Switch	FS-1108AU	NC14004-B896-R	
16 Port KVM Switch	FS-1116AU	NC14004-B897-R	
4 Port KVM Switch	FS-1104MU	NC14004-B895/M-R	Supports ORACLE (SUN)
8 Port KVM Switch	FS-1108MU	NC14004-B896/M-R	Supports ORACLE (SUN)
16 Port KVM Switch	FS-1116MU	NC14004-B897/M-R	Supports ORACLE (SUN)

(Reference: Optional Accessories)

Name	Model number	Serial number	Remarks
Dedicated server/PC connection cable	FP-C018-PS2	NC14000-B602-R	PS/2: 1.8m
	FP-C030-PS2	NC14000-B603-R	PS/2: 3.0m
	FP-C050-PS2	NC14000-B605-R	PS/2: 5.0m
	FP-C018-USB	NC14000-B102-R	USB: 1.8m
	FP-C030-USB	NC14000-B103-R	USB: 3.0m
	FP-C050-USB	NC14000-B105-R	USB: 5.0m
Rack mount panel (for the 4 port type)	FP-P005	NC14003-T038-R	

13. Troubleshooting

Symptom	Cause	Remedy
Keyboard and mouse operation are not normal/ unresponsive.	The keyboard and mouse are connected in reverse. (PS/2 only)	Connect the keyboard and the mouse correctly to the server and KVM Switch.
	The Hotkey mode is not released.	Press <Enter> or <Esc>.
	Poor connection/defective cable.	Confirm that the connector is connected properly. Replace the keyboard or mouse.
	An unsupported keyboard or mouse is connected.	Replace the unsupported keyboard or mouse with one that is supported.
	The keyboard and mouse are connected to both the PS/2 console and the USB console.	Remove the mouse and keyboard connection from either the PS/2 console or the USB console. When a keyboard and mouse are both connected to a PS/2 console and a USB console, the USB side is given priority and the PS/2 side does not operate.
	The keyboard type (country code) is set but the keyboard does not operate according to the setting.	When cascade connections on the slave side are used for a previous KVM Switch model, the DIP switch setting on the previous KVM Switch model is enabled. Change the DIP switch setting.
The mouse button does not operate.	An unsupported mouse is used.	Replace the unsupported mouse with a mouse that is supported.
	The appropriate mouse driver is not installed.	Install the correct mouse driver.
Poor image quality. (Ghosts, blurry letters, etc.)	Poor connection/defective cable.	Confirm that the connector is connected properly. Use a different cable. If the problem goes away, exchange the defective cable with a good one.
Image is not centered on screen or does not display when the screen is changed.	The resolution is different.	Set the resolution to the correct resolution or adjust the resolution settings on the monitor.
	Unsupported monitor/ not synchronized.	Connect a monitor that is supported. Adjust the monitor.
AutoScan changing cycle is not normal.	The changing cycle has not been adjusted. (10 seconds is the default setting)	Use <↑> and <↓> to adjust the settings.

Symptom	Cause	Remedy
A working operation or device suddenly becomes inoperable.	The connecting cables have been removed.	Check the connection, and try again.
	The KVM Switch is frozen.	Press the Reset switch.
	An error occurred in the server.	Fix the error in the server.
The cascade connection is not recognized.	An error occurred in the KVM Switch.	Press the Reset switch on the KVM Switch on the master side for five seconds or more.
Nothing is displayed on the screen.	The image signal of the server is not output due to the power saving settings of the server.	The power saving mode can be released by entering MODE-1 of the Hotkey mode, which automatically operates the mouse cursor (this function is not available in previous KVM Switch models).
	The power of the selected server is OFF.	Enter MODE-1 of the Hotkey mode and select a different server.
	The display froze because the changing cycle of the KVM Switch on the display is unsupported.	Change SELECT-B to SELECT-A on the OSD, and turn the monitor OFF and then ON again.
The screen display size is not normal.	The EDID data of the monitor is not being read.	Enter MODE-1 of the Hotkey mode and set the EDID data.
	The monitor is not supported.	Connect a supported monitor and set the EDID data.
The server cannot be changed by pressing the [ServerSelection] switch.	A previous KVM Switch with a slow change cycle is connected as a slave.	This only occurs when the [ServerSelection] switch is pressed quickly. Press the switch slowly or hold down the switch for a long time to use the server quick selection (SELECT-A). This problem can also be resolved by replacing the slave switch with the latest KVM Switch, which is capable of high speed changing.
Server synchronization (LINK WITH SERVER) does not work.	When a cascade connection is used, the LINK WITH SERVER settings must be performed on both the master and slave sides.	The master side LINK WITH SERVER settings can be performed by operating the OSD or the front panel. The slave side LINK WITH SERVER settings can be performed by operating the front panel.

Appendix. Server Name Record Sheet

Use these record sheets to record the names of set servers for the KVM Switch.

Master Unit	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.1	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.2	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.3	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.4	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.5	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.6	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.7	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.8	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.9	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.10	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.11	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.12	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.13	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.14	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.15	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

Slave Unit Port.16	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
12	
13	
14	
15	
16	

NOTE

NOTE

NOTE

4 Port KVM Switch (FS-1104AU/FS-1104MU)
8 Port KVM Switch (FS-1108AU/FS-1108MU)
16 Port KVM Switch (FS-1116AU/FS-1116MU)

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